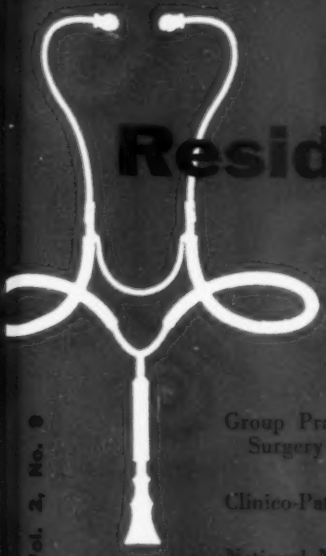

Resident Physician

September 1958, Vol. 2, No. 9

Group Practice of Medicine and Surgery

Clinico-Pathological Conference

National Naval Medical Center

Navy Medicine: Residency Training and Career Opportunities

Letter To a Resident

Investing for the Resident

The Resident Writes a Paper

Anesthesiology Board Requirements

Mediquis

What's the Doctor's Name?

Sept.

SPECIAL REPORT Navy Residencies and Career Opportunities

Journal for the Resident

the high cost of bad habits: gastric hyperacidity

Hurried meals and tense days exact their price in short order. Gastric hyperacidity—whether acute or chronic—can, however, be relieved quickly and pleasantly with Gelusil.

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Dosage: 2 Gelusil tablets or 2 teaspoonfuls of Gelusil liquid two hours after eating or when symptoms are pronounced. Each tablet or teaspoonful provides: 7½ gr. magnesium trisilicate and 4 gr. aluminum hydroxide gel. Gelusil-Lac: at bedtime, one heaping tablespoonful stirred rapidly into one-half glass (4 fl. oz.) of cool water. (Provides equivalent of 4 Gelusil tablets.)

Gelusil®/Gelusil-Lac

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100 YEARS OF SERVICE TO THE MEDICAL PROFESSION

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A HAPPY MEDIUM IN PSYCHOMOTOR STIMULATION

• *Boosts the spirits, relieves physical fatigue and mental depression . . . yet has no appreciable effect on blood pressure, pulse rate or appetite.*

Ritalin is a mild, safer central-nervous-system stimulant which gently improves mood, relieves psychogenic fatigue "without let-down or jitters . . ."[1] and counteracts oversedation caused by barbiturates, tranquilizing agents and antihistamines.

Ritalin is not an amphetamine. Except in rare instances it does not produce jitteriness or depressive rebound, and has little or no effect on blood pressure, pulse rate or appetite.

Reference: 1. Pocock, D. G.: Personal communication.

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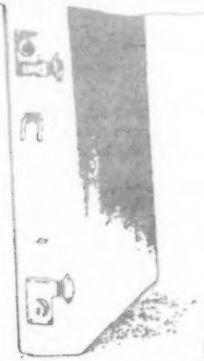

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NOW **50% more Ferrous Sulfate**
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ALSO ADDED: ½ U.S.P. Unit of Vitamin B_{12} with intrinsic factor concentrate

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*Reifenstein, E. C., Jr., in Harrison, T. R.: Principles of Internal Medicine, ed. 2, New York, The Blakiston Company, Inc., 1954, chap. 98, pp. 702, 703.

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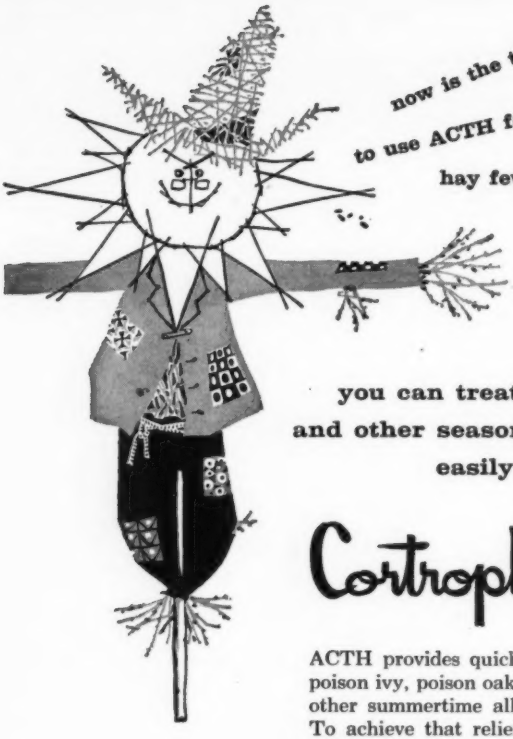

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Journal for the Hospital Resident

Resident Physician

September 1956, Vol. 2, No. 9

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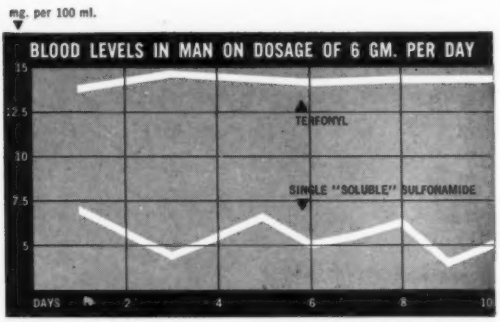

— After Lehr, D., Modern Med. 23:111 (Jan. 15) 1955.

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Terfonyl Suspension, 0.5 Gm. per 5 ml., pint bottles.

0.167 Gm. each of sulfamethazine, sulfadiazine and sulfamerazine per tablet or per 5 ml. teaspoonful of suspension.

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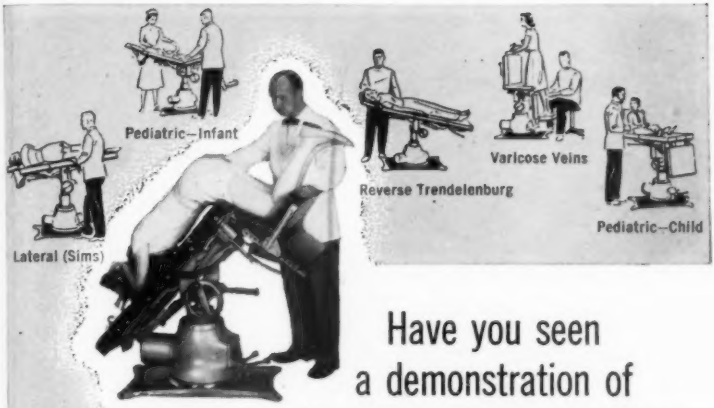

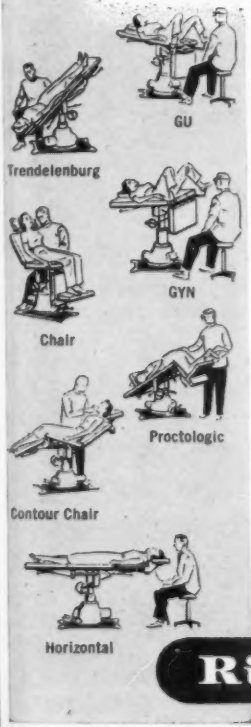

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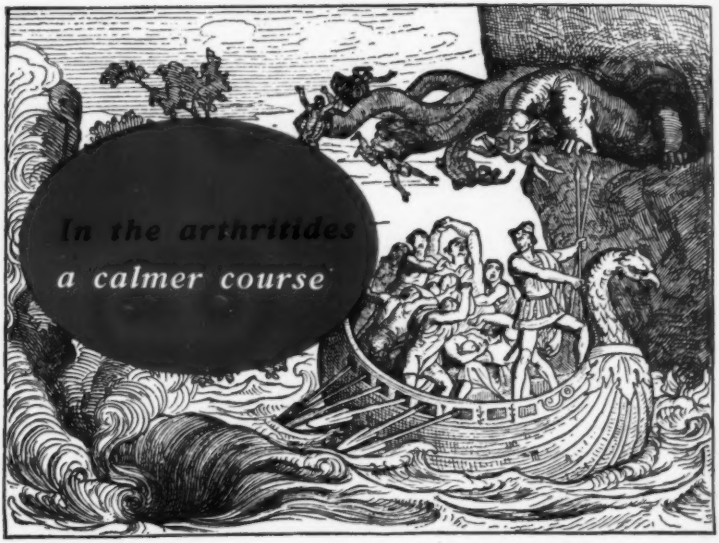

Ulysses between Scylla and Charybdis—Bettmann Archive

between the hazards of high steroid dosage
and the frustration of inadequate relief

Because of the complementary action of cortisone and the salicylates, Salcort produces a greater therapeutic response with lower dosage. Side effects are not encountered, and no withdrawal problems have been reported.

One study concludes: "Salicylate potentiates the greatly reduced amount of cortisone present so that its full effect is brought out without evoking undesirable side reactions."[1]

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indications:

Rheumatoid arthritis . . . Rheumatoid spondylitis . . . Rheumatic fever . . . Bursitis . . . Still's Disease . . . Neuromuscular affections

each tablet contains:

Cortisone acetate	2.5 mg.
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Aluminum hydroxide gel, dried	0.12 Gm.
Calcium ascorbate. . . .	60.0 mg.
(equivalent to 50 mg. ascorbic acid)	
Calcium carbonate . . .	60.0 mg.

[1] *Busse, E.A.: Treatment of Rheumatoid Arthritis by a Combination of Cortisone and Salicylates. Clinical Med.* 11:1105

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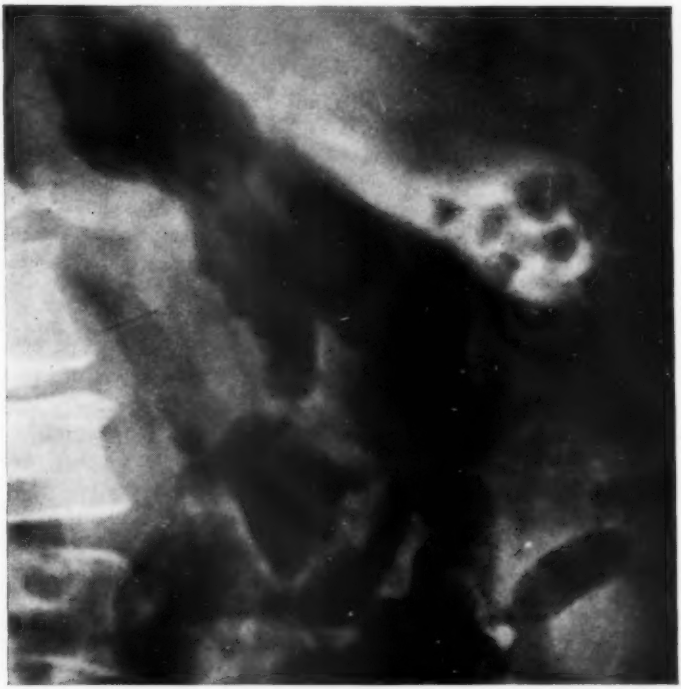
Viewbox Diagnosis

Edited by Maxwell H. Poppel, M.D., F.A.C.R.,
Professor of Radiology, New York University College of Medicine
and Director of Radiology, Bellevue Hospital Center

Which Is Your Diagnosis?

1. Gas bacilli infection
2. Non-opaque gall bladder stones
3. Normal
4. Gas in colon

(Answer on page 146)



intramuscular

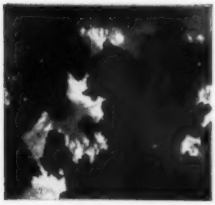
VARIDASE*

Streptokinase-Streptodornase Lederle

provides remarkable control over inflammation

Many patients with inflammatory lesions respond dramatically when VARIDASE is given intragluteally. Action is similar to VARIDASE applied locally, but results are much more swift and hitherto unattainable areas may be treated by the intramuscular route.

When employed in this manner, VARIDASE lyses the "limiting membrane" of leukocytes and fibrin which is thrown up about an inflamed or infected area. Thus, liquefaction and resorption of the contained exudate is made possible. In case infection is present, or feared, an antibiotic such as ACHROMYCIN* Tetracycline should be administered concomitantly to prevent the development of generalized sepsis.



Recent investigation has extended the list of indications for intramuscular VARIDASE therapy to include abscesses, burns, cellulitis, edema, epididymitis, hemarthrosis, sinusitis, lymphangitis, lymphadenitis, and thrombophlebitis with or without superimposed infection.

VARIDASE (Water Soluble—No Oil)

Administration: INTRAMUSCULAR, deep in the upper, outer quadrant of the buttock

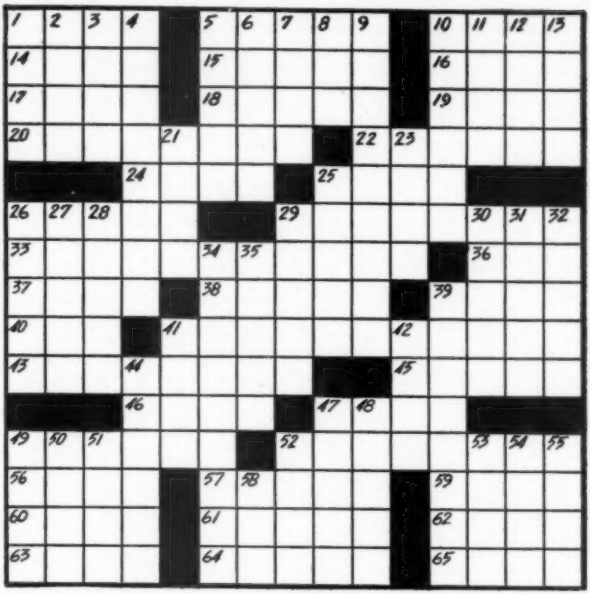
Lederle

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, N.Y.

*REG. U. S. PAT. OFF.

Resident Relaxer

(Answer on page 146)



ACROSS

1. Be dull or spiritless
5. Contagious skin disease
10. Half (Prefix)
14. Proprietary food containing no iron and rich in milk albumin
15. Swelling
16. Vomiting (Comb. form)
17. Suffix indicating compound of sugar and other substance
18. —'— Plates, used in open reduction of fractures
19. Monetary unit of Italy (Pl.)
20. Dwarfism
22. English dentist whose name is associated with the incremental lines of dentin
24. Kidney (Comb. form)
25. Pertaining to Denmark (Comb. form)
26. Stage of a disease
29. Screenings
33. Suborder of the Hemiptera
36. Crude metal
37. Persian poet
38. Girl's name
39. Scrutinize
40. Musical instrument (Abbr.)
41. Inflammation of the fibrous covering of bone
43. Resembling the hardened forewing of an insect
45. Useful
46. Borders
47. Proprietary disinfectant
49. Source of oil of benne
52. Remedy for pain
56. Derived from ammonia
57. Interdiction
59. D——, pain (Span.)
60. Class occurring with greatest frequency in a series of variables
61. King of Moab, oppressor of Israelites
62. Knee
63. The lower lateral nasal cartilage
64. Long and slender
65. Affirmatives

DOWN

1. Muscle
2. Bone (Pl.)
3. Albuminoid substance in pus
4. Signer
5. Paronychia
6. Canadian pathologist (1861-1926): theory explaining heredity
7. Vein (Lat.)
8. Leg——, bean
9. Genus of lauraceous tree of North America, the root bark of which is aromatic, stimulant, diaphoretic, and carminative
10. Guardians of the oracle of Zeus at Dodona (Gr. myth.)
11. Exude
12. Lake or pool
13. Tubular passage
21. Prophet
23. ———cid, Aluminum Hydroxide is one
25. Prescribed rules for eating (Comb. form)
26. Any subjective sensation, as of light or color
27. Pertaining to the blood
28. Failure of muscular cordination (var.)
29. Sedate
30. Night (Comb. form)
31. Chalice
32. Faculty of perception
34. Instrument for testing the purity of oil
35. ——falsis, intestinal propulsive movements
39. Sum of knowledge regarding food, diet, nutrition
41. Formally precise
42. ———remia, Francis' disease
44. Dissecting instrument
47. Fillet worn around the hair
48. Lack of normal strength
49. ——ritan, one who is compassionate to a fellow in distress
50. Emollient mineral
51. Genus of tropical herbs yielding demulcents
52. Competent
53. Delight
54. Small island north of Scotland, early center of Celtic church
55. The shank
58. Grow older

NOTABLE QUOTES
about CLISTIN in Allergy

"Carbinoxamine maleate produced the fewest complaints of drowsiness, as well as the lowest incidence of all side effects . . ."[1]

". . . compares favorably with the most effective antihistaminic agents now available . . . produces less sedation than most . . ."[2]

"Undesirable side effects . . . were infrequent and usually mild in nature."[3]

"87 per cent reported some relief of their symptoms . . ."[3]

"Clistin has proved to be useful in the relief of symptoms caused by perennial allergic rhinopathy and in acute and chronic urticaria and pruritus."[4]

"Clistin Maleate is a potent antihistaminic drug with only weak sedative properties . . ."[2]

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(Carbinoxamine Maleate, McNeil)

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Dosage forms:
Tablets Clistin Maleate, 4 mg.
Tablets Clistin R-A (Repeat Action Tablets Clistin Maleate, 8 mg.)
Elixir Clistin Maleate, 4 mg. per 5 cc.

1. MacLaren, W. R., Bruff, W. C., Eisenberg, B. C., Weiner, H., and Martin, W. H. Ann. Allergy *13*:307 (May-June) 1955.
2. Beale, H. D., Rawling, F. F. A., and Figley, K. D.: J. Allergy *25*:521 (Nov.) 1954.
3. Johnson, H. J., Jr.: Am. Pract. & Digest. Treat. *5*:862 (Nov.) 1954.
4. Garat, B. R., Landa, C. R., Rossi Richeri, O. F., and Tracchia, R. O.: J. Allergy *27*:57 (Jan.) 1956.

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Letters to the Editor

Unsigned letters will neither be published nor read. However, at your request your name will be withheld.

Investing

Does anyone know how many Americans own stock in U. S. companies? Are they mostly wealthy people?

Walter H. Wagner, M.D.
Kansas City, Kansas

● *A recent survey conducted by the New York Stock Exchange showed about 4,600 publicly-held corporations (those with more than 300 stockholders) owned by more than 8.6 million stockholders. Two-thirds of this group live in households earning less than $7,500 a year.*

Your very basic series of articles on investing is excellent. I think you are doing a wonderful thing in filling the gaps in the resident's background of education.

W. S. Sharman, M.D.
Fort Worth, Texas

We think your series, "Investing for the Resident" is timely, and the first article (July 1956) very sound. We particularly like the emphasis upon life insurance and adequate emergency reserves. So far, however, mention of common stock funds has been omitted, and reference to future articles does not include them.

We feel a well managed common stock or balanced fund represents an ideal vehicle for a busy physician who has neither the time nor background needed to select and follow individual issues. We hope you will consider common stock funds in future articles.

W. W. Walker, M.D., Director
John P. Robinson, President
Craig-Hallum, Inc.
Investment Managers
Minneapolis 2, Minnesota

● *In a special article of our investing series we will describe various methods of acquiring investments. Participation in common stock funds, mutual funds, as well as individual purchases through stock brokerage firms will be mentioned.*

—Continued on page 26

no coaxing needed

Suspension

Chloromycetin® Palmitate

pleasant-tasting Chloromycetin for pediatric use

SUSPENSION CHLOROMYCETIN PALMITATE provides CHLOROMYCETIN (chloramphenicol, Parke-Davis) in a tempting, custard-flavored liquid form that youngsters take without cajoling or deception. Subsequent doses are swallowed as readily as the first, because SUSPENSION CHLOROMYCETIN PALMITATE leaves no unpleasant aftertaste and slides soothingly down the most irritated throat.

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CHLOROMYCETIN is a potent therapeutic agent and, because certain blood dyscrasias have been associated with its administration, it should not be used indiscriminately or for minor infections. Furthermore, as with certain other drugs, adequate blood studies should be made when the patient requires prolonged or intermittent therapy.

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Thiamine Hydrochloride	10 mg.
Riboflavin	5 mg.
Nicotinamide (as hydrochloride)	150 mg.
Vitamin B_{12} (as cobalamin concentrate)	6 mcg.
Folic Acid	0.3 mg.
Ascorbic Acid	150 mg.

They're **SMALLER,** *because of the* **Filmtab** *coating*

Supplied: Bottles of 50, 100 and 1000 Filmtabs. Abbott

®Filmtab: Film-sealed tablets, Abbott; pat. applied for.

TANGIBLE RELIEF IN PREMENSTRUAL TENSION

another indication for

Diamox*

ACETAZOLAMIDE LEDERLE

A single tablet of DIAMOX controls fluid retention with tangible relief of symptoms of premenstrual tension such as pelvic engorgement, tightness of skin, pruritus and headache. Patients report marked improvement of physical and emotional well-being on a simple regimen of DIAMOX: one tablet daily, beginning 5 to 10 days before menstruation, or at the onset of symptoms.

Of proven value in cardiac edema, acute glaucoma, epilepsy, obesity, toxemias and edema of pregnancy, the action of DIAMOX is considered a welcome departure from that of the mercurials.[1] It is well tolerated orally and even when given in large dosage side effects are rare.[2] Excretion by the kidney is complete within 24 hours with no cumulative effects.[2]

A safe, versatile drug, DIAMOX is effective not only in the mobilization of edema fluid but in the prevention of fluid accumulation as well.[2] A single dose is active for 6 to 12 hours, offering convenient daytime diuresis.

Supplied: Scored Tablets of 250 mg. (Also in ampuls of 500 mg. for parenteral use in critical cases).

1. Krantz, J. C. and Carr, C. J.: The Pharmacologic Principles of Medical Practice. Ed. 3. The Williams & Wilkins Co., Baltimore, 1954, p. 1014.

2. Goodman, L. S. and Gilman, A.: The Pharmacological Basis of Therapeutics. Ed. 2. The Macmillan Co., New York, 1955, p. 856.

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in rheumatoid arthritis

clinical evidence[1,2,3] indicates that to augment the therapeutic advantages of the "predni-steroids" antacids should be routinely co-administered to minimize gastric distress

ROUTINE CO-ADMINISTRATION MEANS

'Co-Hydeltra'

(Prednisolone Buffered)

Multiple Compressed Tablets

2.5 mg. or 5 mg. prednisone or prednisolone with 50 mg. magnesium trisilicate and 300 mg. aluminum hydroxide gel.

'Co-Deltra'

(Prednisone Buffered)

All the benefits of the "predni-steroids" plus positive antacid action to minimize gastric distress.

References: 1. Boland, E. W., *J.A.M.A.* 160:613 (February 25) 1956. 2. Margolis, H. M. *et al.*, *J.A.M.A.* 158:454 (June 11) 1955. 3. Bollet, A. J. *et al.*, *J.A.M.A.* 158:459 (June 11) 1955.

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in respiratory allergies

all the benefits of the "predni-steroids"
plus positive antacid action
to minimize gastric distress

ROUTINELY ACHIEVED WITH

'Co-Deltra'
(Prednisone Buffered)

Multiple Compressed Tablets

'Co-Hydeltra'
(Prednisolone Buffered)

2.5 mg. or 5 mg. prednisone or prednisolone with 50 mg. magnesium trisilicate and 300 mg. aluminum hydroxide gel.

Clinical evidence[1,2,3] indicates that to augment the therapeutic advantages of prednisone and prednisolone, antacids should be *routinely* co-administered to minimize gastric distress.

References: 1. Boland, E. W., *J.A.M.A.* **160**:613 (February 25) 1956. 2. Margolis, H. M. *et al.*, *J.A.M.A.* **158**:454 (June 11) 1955. 3. Bollet, A. J. *et al.*, *J.A.M.A.* **158**:459 (June 11) 1955.

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Continued from page 20

Opinion

There is a slight difference of opinion among us concerning the A.M.A. policy towards straight and rotating internships. Could you clear this up? My claim is that the Association is against straight internships. Also, what is this we hear about a revision in the Principles of Medical Ethics?

Walter Rapp, M.D.
Chicago, Ill.

● *Perhaps "against" is a strong word. However, the A.M.A. prefers to have internships of a rotating type. Recently, the House of Delegates urged the Council on Medical Education and Hospitals to increase its efforts to encourage replacement of straight internships with rotating internships.*

The House of Delegates also approved on a tentative basis a broad revision of the Principles of Medical Ethics. The net result of the revision would be to condense the "Principles" to a few straightforward statements, separating what might be termed the "etiquette" of medical practice from "ethics." However, final action on the revision was postponed until January.

HEY! How About Us?

It seems to me Mrs Resident is being ignored.

Most of us wives expect to be left alone a lot by our resident husbands —though we never get really used to it—but is that any reason not to give us a little article now and then in your new journal? Incidentally, I've found your magazine a big help in understanding some of the problems which my absent spouse faces. I can even ask an intelligent question now and then, too.

Mrs. A. R. Richardson
Topeka, Kansas

●*Coming issues will carry articles of special interest to wives of residents. If you wives have any tip, secrets, anecdotes, or full blown articles you think would interest other wives, let's hear from you right away. We promise not to ignore you.*

Young Reader

RESIDENT PHYSICIAN is being read by a very young resident (of California) these days. My young son, Eric, seems to find it very interesting, judging by the look of concentration and enjoyment on his face.

Arne P. Hvolboll, M.D.
Los Angeles, California

● *How's Eric doing with the Mediquiz?*

not to
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M.D.

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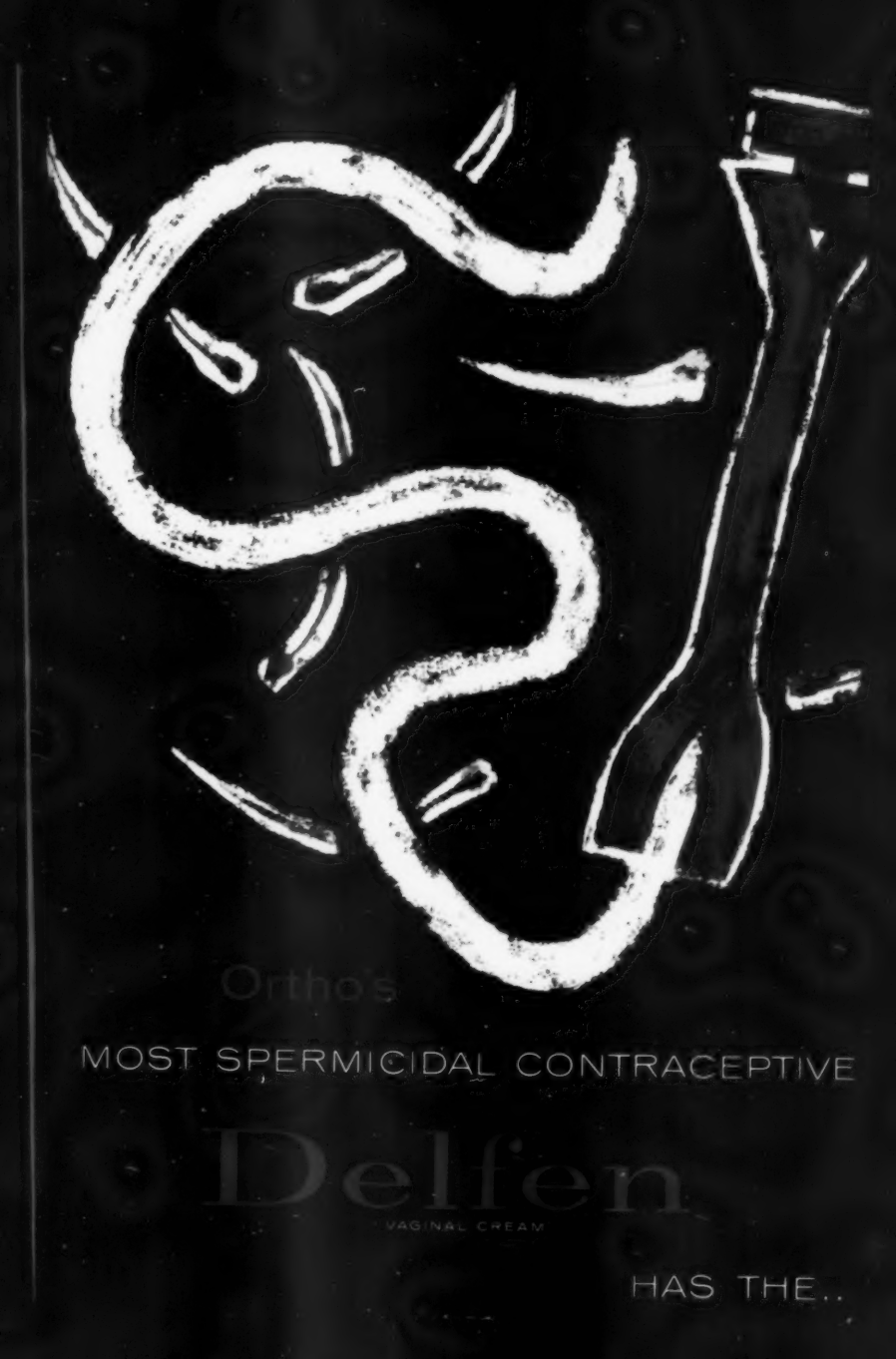
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MOST SPERMICIDAL CONTRACEPTIVE
Delfen
VAGINAL CREAM
HAS THE..

maximum concentration

f a new most potent

well tolerated spermicide

effective and acceptable

"In our opinion, the new contraceptive cream [DELFEN vaginal cream], when used alone, is highly spermicidal, and a satisfactory method of conception control. Its relative simplicity makes it very acceptable to the patient."

Brown, D., Olson, J. [illegible], W. Phillips, W., Otterness, I. [illegible] and Tyler, E. T.: West. J. Surg. 64: 152, 1956.

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WHEREVER
SKELETAL
MUSCLE
SPASM
OCCURS...

flexin*

(Zoxazolamine,† McNeil)

orally effective muscle relaxant

safe: "No irreversible side-effects occurred."[1]

well-tolerated: "The toxic reactions for the most part were easily controlled...."[1]

effective spasmolytic:
"This preliminary report of 100 patients indicates an 85% over-all effectiveness."[1]

Available in yellow scored tablets, 250 mg.

1. Smith, R. T.; Kron, K. M.; Peak, W. P., and Hermann, I. F.: J.A.M.A. 160:745 (Mar. 3) 1956.

*T.M. †U.S. Patent Pending

McNEIL
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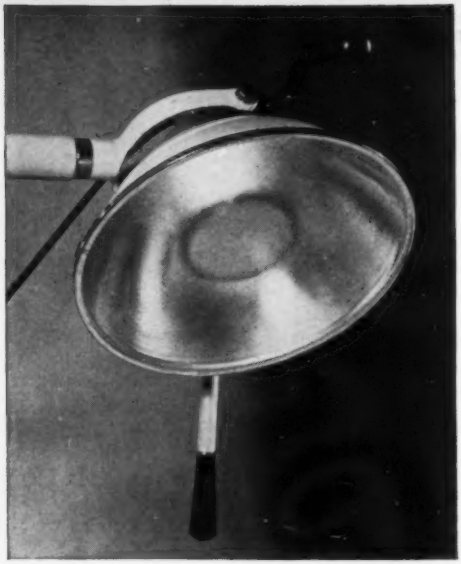

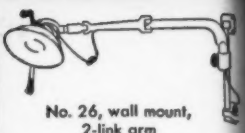

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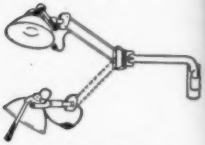
2-link arm

No. 27C, ceiling mount,
pantograph arm



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for better surface examination

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By using divergent light rays, this illumination is made glareless, shadow-free. Near-perfect color correction makes tissues appear as near true color as possible. This makes your work easier, and reduces eye-strain and resulting fatigue.

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a surface closure for small wounds

STERILE . . .
ready for instant use

Non-adhering center section prevents sticking to wound.

Super-Stick adhesive firmly holds wound edges together.

Johnson & Johnson

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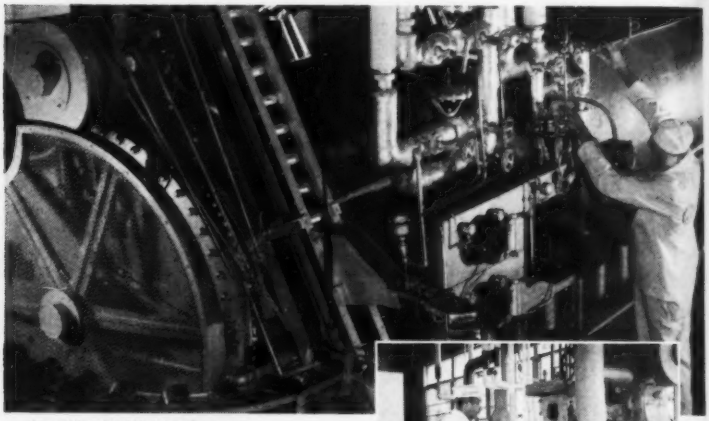
Report | from Carnation Research Laboratory

Van Nuys, California



Carnation Sterilization Process

Current Research: Carnation Evaporated Milk

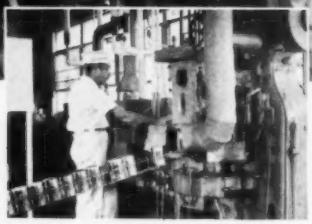
Sterilization Methods

One step in the processing of Carnation Evaporated Milk is "classified information." This is the time-temperature relationship during the sterilization of Carnation Evaporated Milk in the can. It is this method, based on 50 years of Carnation experience, that not only renders the milk safe and sterile, *but also produces the uniform, easily digested low tension curd so important in infant feeding.*

Carnation Research Laboratory investigates other sterilization methods constantly, but has not found, to date, any other method that provides the same degree of safety combined with the advantage of uniform low curd tension.

Radiation and Sterilization

In addition to direct research, Carnation sponsors university research in highly specialized fields. A sponsored project currently under way at the Massachusetts Institute of Technology concerns the possibilities of radiation for the sterilization of evaporated milk and other dairy products.



One of the sterilization methods investigated by Carnation Research Laboratory

Carnation Protects Your Recommendation with Continuous 5-Phase Research:

Carnation Research Laboratory; Carnation Farms; Carnation Plant Laboratories; Carnation Central Product Control Laboratory; Carnation-sponsored University & Association Research.

"from Contented Cows"

NOW!

Color Patches Identify Sizes of BARDEX Foley Catheters

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NATIONAL PHENOMENON: THE PLANNED BIG FAMILY

THE PROPHETS OF DOOM who talked of the nation's dwindling population were never more wrong. Today improved economic and social conditions are resulting in bigger families – *planned* big. Families of three or more children have increased 47 per cent during the past seven years.[1]

Pregnancies wanted – Women seeking advice today on conception control want to make sure that the method recommended will not impair future fertility. For a dependable method that permits conception *when* it is wanted, the diaphragm-jelly method has no equal. Of regular users who discontinued the method in the hope of conceiving, "25 to 30 per cent achieved pregnancy within one month."[2]

Comfort, peace of mind – RAMSES® Diaphragm and Jelly combine comfort for the patient with confidence in the method. The flexible, cushioned rim of the RAMSES Diaphragm assures the utmost freedom and comfort. RAMSES Jelly, "the 10-hour jelly" because it occludes that long, quickly immobilizes sperm and is non-irritating.

Patients who want their families *when* they want them will rely on these RAMSES products as physicians have done for more than thirty years: RAMSES "Tuk-A-Way"® Kit (#701)—diaphragm, introducer and jelly, RAMSES diaphragms 50-95 millimeters, RAMSES jelly in 3 and 5 oz. tubes.

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1. U. S. Census. 2. Tietze, C., in Dickinson, R. L.: Techniques of Conception Control, ed. 3, Baltimore, Williams & Wilkins Co., 1950, pp. 55-57.

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increasingly preferred

by physicians

strikingly effective

for patients

in rheumatoid arthritis

METICORTEN*

(PREDNISONE)

excellent relief of pain, swelling, tenderness; diminishes joint stiffness—facilitates early physical therapy—expedites rehabilitation

dietary regulations usually unnecessary

minimizes incidence of electrolyte imbalance

1, 2.5 and 5 mg. tablets

METICORTEN,* brand of prednisone.

*T. M.

MC-J 5376

For controlling cough

ROMILAR IS AT LEAST AS EFFECTIVE AS CODEINE

Milligram for milligram,
Romilar is equal to codeine
in specific
antitussive effect

For avoiding unwanted side effects

ROMILAR IS CLEARLY BETTER THAN CODEINE

Non-narcotic,
non-addicting—
does not cause drowsiness,
nausea,
or constipation

ROCHE Hoffmann-La Roche Inc • Nutley • N. J.

Romilar® Hydrobromide—brand of dextromethorphan hydrobromide
Syrup, Tablets, Expectorant (w/NH_4Cl)

Perrin H. Long, M.D.

Editor's Page

This editorial was written while your editor served with his United States Army Reserve Medical Unit in its annual unit training at Camp Drum, New York.

Military Reserve Opportunities

As has been mentioned repeatedly in Resident Physician, economic difficulties plague many residents. I would judge that most are looking for legal and ethical ways to make an honest dollar. Now, the Armed Forces reserve programs offer this opportunity. And it is a continuing source of surprise to me that more house staff members do not take advantage of this situation.

All of the military forces have units which are classed as active reserve units and which have regularly scheduled meetings. As I am more familiar with the Army, I will use this branch of service in my example. The medical branch of the United States Army Reserve is organized to provide active reserve training for doctors in divisional medical services, certain separate battalion-sized units, and hospital units of various types. Many of

these units have training schedules which provide for forty-eight training periods of two hours each, per night, per week, and a fifteen-day period of training at an active army installation during the year.

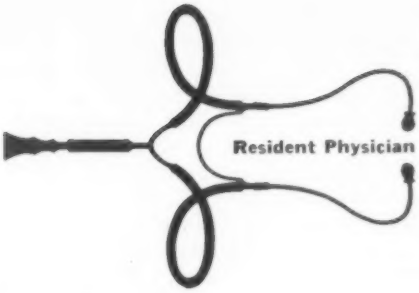
Now, let's see how this works out to the economic advantage of the house staff member. Take an individual who has had his two years of obligated military service and who is a captain. His pay for each drill period would be $10.86 for each training period. Suppose he attended all forty-eight, two-hour armory training sessions, plus fifteen days of annual unit training, what would be his economic gain? The answer is, about $700. If he should have longer service, the pay would be increasingly higher.

Another example would be a medical student who entered the USAR Medical as a second lieutenant, Medical Service Corps, as soon as he was accepted for medical school. During his four years of medical school he could earn a total of about $2,000. In his intern year he would get over $700, and then after he returned from his obligated service under the Doctors' Draft Act or the Berry Plan, he would soon be earning over $900 a year from his USAR service.

The house staff member may wonder how he can give the time. In my personal experience I have never seen a house staff member so busy that he could not arrange for one night a week of armory training; and municipal and state hospitals are willing to give time off with pay for the fifteen days of annual unit training. Voluntary hospitals may take a somewhat different attitude, but most of them are very cooperative in relation to having their house staffs participate in Reserve activities.

How do you get into a USAR medical unit? Just call your local USAR office or Army recruiting office and ask for Medical. There they will tell you whether there is a Reserve unit needing medical officers in your vicinity.

Perrin H. Long.



Group Practice Of Medicine and Surgery

Whether you start out to form your own group or join up with an existing combine, here is a clear view into a complicated structure. Wide variations exist in size, organization, control, composition and operation. The author highlights these differences, points out the problems and advantages—and describes some of the growing pains inherent in group practice.

Joseph Axelrod

In a very real sense, you are now in group practice.

As a resident you share with other physicians your professional skills in the treatment and prevention of disease, using common facilities and equipment. Your house staff is assisted by "subsidiary personnel for administrative and clinical purposes." [1]

You are also occupied on a full-time basis with colleagues in other specialties, sharing in the responsibility of patient care. Unit medical records and practice under one roof encourages consultation and easy cooperation with your fellow group members.

This systematic joint medical practice in one place enhances your ability to provide high quality medical care to patients while affording you necessary opportunities for your continued postgraduate education.

Is this the pattern of practice you intend to pursue? Or will you join the majority of physicians in the solo private practice of medicine? This choice deserves your careful consideration.

The existence of medical groups; their reasons for being; organization and administration; fees and income; location, staff and services; their advantages to doctors and patients; obstacles and criticisms; the causes of their success and failure and the future of this method of practice have been the subjects of considerable study and discussion. It is intended here to provide you with information, to acquaint you with the forms of group practice in the United States, and to touch upon the subjects listed.

ABOUT THE AUTHOR — A graduate in Chemistry of the University of North Carolina, Mr. Axelrod worked for a number of years as an industrial chemist prior to entering the Air Force during World War II. He assumed his present post as administrator of the Montefiore Hospital (New York City) Medical Group; the first such group in the country to be formally organized as a department of a voluntary hospital. The author took a leave of absence for a year's study at Yale University leading to a Master's degree in Public Health. He majored in medical care administration. Completing his studies at Yale in 1951, Mr. Axelrod resumed his position as administrator of the Montefiore Group which is presently composed of 15 physicians and serves the medical needs of some 25,000 insured patients.

Definition

Group practice may be defined as the formal association of three or more physicians who share their professional skills and resources in the care of patients, who make joint use of medical equipment and facilities, employ technical and administrative personnel in common, and have a unified administrative and financial organization.[2, 3]

In some specific detail, these are the characteristics commonly present in medical group practice:

1. A sharing of such facilities as office space, examination and consultation rooms, x-ray equipment, laboratory and other equipment in a group center where a group of physicians practice.
2. The group of physicians includes both general practitioners, who serve as family doctors, and specialists. All or only some of the major and subspecialties may be represented.
3. In so far as need exists for their services, as many physicians as possible are on a full time basis and derive their pro-

fessional incomes almost solely from the group practice.

4. Patients are freely referred to specialists for consultation and there is co-ordinated effort of the group physicians on behalf of the patient. Competition is absent among the physicians, rather a cooperative effort is in evidence to pool their skills.
5. The financial transactions of each patient are with the group as a whole regardless of whether he has been served by one or several group physicians.
6. Physicians share in the group income by contracted arrangement among themselves, not on an individual fee-for-service basis.
7. The primary function of the group is to provide medical care; research and medical education may be collateral activities.
8. The administrative and financial matters are handled by a business manager.[4]

Ownership

Descriptive classifications may be helpful here to identify group practices according to owner-sponsorship.[5]

1. *Private groups.* Ownership and authority vested in one or more of the physicians who are practicing together as a group.
2. *Industrial groups.* Ownership and authority vested in a com-

mercial company, with the employees of the company as the principal, if not the only patients.

3. *Consumer groups.* Ownership and authority vested in an organization consisting of potential recipients of medical care. These may be employees of a single company, a consumers cooperative, a labor union or a similar organization.
4. *Hospital groups.* Ownership and authority vested in a nonprofit voluntary community hospital.
5. *Medical-school faculty groups.* Ownership and authority vested in a university or medical school, or in one of its subsidiaries or components.
6. *Government groups.* Ownership and authority vested in a federal, state or local governmental agency.

Type of service

A simpler classification is possible which is based on the scope and type of medical services offered:

1. *Service groups.* Those groups which provide continuing home, office and hospital care of a rather comprehensive scope, including general practitioner and specialists' services. The best known groups of this type are the Health Insurance Plan groups in New York City, the Kaiser-Permanente groups in California, the Group Health Association in Washington, D. C., and the Labor Health Institute of St. Louis.
2. *Reference groups.* Those groups composed of specialists who provide episodic diagnosis and care to referred patients as their principal activity. The Mayo, Lahey and Cleveland clinics are well known examples.
3. *Diagnostic groups.* Those groups which concentrate their efforts on diagnosis and provide little or no treatment; usually reporting their findings to referring or family physicians for follow-up. The Mt. Sinai Diagnostic Service in New York City is an example.

Private service groups, because they constitute about 95% of all existing medical groups in the United States, shall be the exclusive subject of further discussion here.

Reasons for being

A tornado in Rochester, Minnesota, in 1883 with its destruction and casualties was probably responsible for the establishment of the first modern group practice. Four years later, W. W. Mayo and his two sons established the clinic which by its growth and success has encouraged the formation of medical groups generally. The first real spurt in group formation, however, did not occur until immediately after World War I, probably as a result of the military medicine experiences of a

number of physicians. Another sharp increase was observed after the recent war.

Expansion and efficiency

Physicians in group practice most commonly express their conviction that they are able to practice high quality medicine in a group as the reason for their choice of this method of practice. Actually, groups are usually formed by three or four physicians who pool their practices, and either employ assistants or invite other physicians to join them in partnership, because their practices have grown too large to handle.

Another basic impetus to group practice is the inefficiency inherent in the use of office space, equipment and personnel in the private solo practice of medicine.

Sharing overhead costs permits groups of physicians either to improve the quality and quantity of facilities and personnel, or to make economies which can be passed on to patients, or both.

Location

Group practices usually locate in the community, and more particularly, the neighborhood of the founding physician and his original partners.

Although the most reliable information is almost ten years old,[6, 7] there is good reason to believe that the geographical distribution of groups has not materially changed. At that time, of 368 groups surveyed (349 service and 19 reference type groups), roughly 45% were located in the Midwest, a fourth each in the South and the West, and under 7% in the Northeast region of the United States. Nearly 60% of these groups were in communities of less than 25,000 population and over 80% were in cities and towns of less than 100,000. In fact 47% of the group practices were operating in isolated semi-rural communities not adjacent to large cities. This last ratio has probably been altered in favor of urban and suburban locations by the growth of Kaiser Permanente and Health Insurance Plan groups in recent years. Minnesota, Wisconsin, California and Texas are now challenged by New York as the states which have the most groups.

Staff, specialties

About half of the medical group practices in this country are still small—with the equivalent of three to five full-time physicians comprising their professional staffs. The mean size of groups is approximately ten physician members and this size in service groups is generally considered the minimum necessary for an effective group practice. Groups tend to increase in staff as the practice ages, usually by addition of specialties represented.

In the order of their frequency, the following specialty services are provided in medical groups: surgery, medicine, obstetrics, x-ray,

gynecology, pediatrics, otolaryngology, ophthalmology, and dentistry. Physicians in group practice recommend, and recent trends evidence increased inclusion of orthopedics, urology, dermatology, psychiatry, pathology, anesthesiology, neurology, gastroenterology, proctology and physiatry, also in that order.

Hospitals

Between 25 and 30 percent of service type group practices own and operate their own hospitals—which average under 100 beds. The majority of group-owned hospitals are located in communities with less than 5,000 population; and about one-fourth are located in communities of 10,000 and over. In groups which do not own hospitals it is essential and common that all group doctors work in the same one or several hospitals.

Services

The following table is perhaps atypical, drawn from the experience of a group practice associated with an urban voluntary hospital, but it will serve to approximate the relative utilization of general medicine, pediatrics and consultant specialists' services.

Radiotherapy and physiotherapy, in the same group experience, were utilized at the rate of 14 and 54 services per 1000 patients per year respectively. In the same period, the group performed 300 deliveries, 350 major and 550 minor surgical procedures—these procedures including all surgical specialties and subspecialties.

ANNUAL DISTRIBUTION OF PHYSICIANS' SERVICES

Services Per 1000 Patients Per Year

SERVICE	
General Medicine	2310
Pediatrics (Ages 1-9 yrs.)	880
Radiology (diagnostic)	640
Allergy	440
Obstetrics and Gynecology	380
Ophthalmology	300
Orthopedics	290
Dermatology	200
Surgery (General)	200
Otolaryngology	190
Internal Medicine	170
Physiatry	120
Radiology (Therapeutic)	80
Urology	70
Neuropsychiatry	50

The volume of diagnostic procedures in the same group practice were performed as follows:

ANNUAL DIAGNOSTIC SERVICES

Services Per 1000 Patients Per Year

PROCEDURE	
Hematology	70
Urinalysis	65
X-ray (body parts x-rayed)	64
Chemistry	17
Electrocardiography	12
Serology	11
Bacteriology	6
Basal Metabolic Rate	2
Pathology	1.5
Audiometry	1

Organization

Partnership is the most common organizational form of group practice, usually with additional employed physicians who are not partners. The partner-physicians are also most frequently the owners of the physical assets of the group, often as stockholders in a corporation established for that purpose. Rarely are all partners of equal rank in terms of income, ownership or authority. Founding partners, senior partners, junior partners, probationary junior partners and employed physicians may all be group staff members although more commonly only senior and junior partners plus employed physicians make up a service group.

The founding and/or senior partners usually are the original organizers of the group, invest the capital necessary, retain the major authority, and usually receive the larger shares of net income.

Junior partners may share, but to a lesser degree in investment and authority. They are most often salaried, with some opportunity to share in net income based on work volume, but have markedly limited authority. In some groups, junior partners may gradually increase their investment and attain senior status with all of its perquisites. The junior partner most frequently has an increasing participation in responsibility and authority as well as share of net income as his tenure is extended. Probationary junior partners are those physicians newly-employed by an existing group for a specified trial period. After this period a junior partner is either offered a junior partnership, leaves the group, or is separated.

Control

Authority in the administrative, financial and policy matters of the group is vested in the senior partners as such or as members of an executive committee with or without a medical director. In policy matters and subjects of general concern, all partners are usually consulted and opportunity is available for full discussion. Most groups do have a medical director who is a founding or senior partner. He is elected by his colleagues or, in some instances, occupies the position by virtue of his seniority. His authority and duties vary with the partnership contracts and their terms which define the director's position. The smaller the group, the greater the authority of the director, and vice versa.

Manager

All but very small groups employ a lay administrator or business manager. His qualifications and duties may vary from secretary-bookkeeper to accountant-medical administrator. Consequently, the business manager's authority and responsibility varies widely as well.

His function is to assist the medical director or the executive com-

mittee in the areas of his special skill and training. The business administration, personnel, purchasing, statistics, and fee collection are most often the fields of the business manager's effort. He has no authority in professional matters, but assists in the coordination of the medical and the business aspects of the group practice operation. His success is measured in terms of the efficiency and economy of the coordinated technical and professional efforts.

Fees

The fees charged in group practice approximate the prevailing fees charged in the community by non-group physicians. Surgical and delivery fees tend to average higher, probably because group physicians are more often qualified specialists in their fields than are solo practitioners.

Essentially, the factors of ability to pay, cost of provision of service and sometimes value of benefit to the patient are employed to vary the fixed amount method of fee determination. The establishment of a particular patient's ability to pay and of the cost of provision of service are functions performed by the business manager of a group practice and his personnel. The physician is relieved of the actual fee-setting and fee-collecting function.

Group income

Income distribution among the physicians in medical groups is usually done by division of net income, by salary or some combination of the two. Since the large majority of groups are partnerships, some drawing account arrangement is made, followed by net income sharing after expenses. Non-partners may or may not share in net income depending upon their terms of employment and stage of progression toward partnership. No perfect method or formula exists for group income distribution.

The following factors are usually considered, but not necessarily in this order: Competence, experience, training, tenure, administrative responsibility, investment, "book value" of work done, special contribution to the group in ability, scarcity of special skill, ability to attract new patients, and contribution to elevated quality of group care.

Point system

Many groups establish a point system for crediting each doctor's "account" with services rendered to patients and the other variable factors previously agreed upon. The individual physician's share of the net income is calculated from the number of points in his account relative to the total of points earned in the group. The method of straight percentage distribution by prearranged formula among physician partners is also common. Some groups use year to year salary agreements based on experience and depending upon

the individual physician's tenure, training, and volume of services. Variations and combinations of the income distribution methods described are often found, particularly in groups which have founding, senior, junior and aspiring partners.

Additional benefits

From available data, it is evident that physicians in private group practice each earn at least as much as their opposite numbers in individual practice and perhaps more. Annual cash income to physicians in group practice is usually augmented by other benefits which really have money value and are so considered. Most medical groups provide some or all of these additional benefits: paid vacations, paid sick leave, paid professional meeting time, paid auto purchase or rental, malpractice insurance, life insurance, health and accident insurance, and pension and retirement programs. Wide variations exist in the number of paid leaves and in the amounts of insurance, but even the least of these seem to be considerable and represent equivalent cash income.

Doctors and patients

Proponents of group practice point to the example of the hospital teaching staff. Certainly, it becomes daily more apparent that as the pattern of medical progress expands into still broader horizons, the individual physician cannot hope to perfect his knowledge and skill in all the many fields of modern medicine.

"We'll either have to raise the pole or cut the staff!"

A group practice offers the team approach with competent consultant specialists in a common plant, using equipment jointly for efficiency. This, claim the group adherents, is the best organizational pattern for medical practice. Physicians are stimulated to their best efforts and promotes a high quality of medical care in a group where each works with his fellow physician, figuratively, "looking over his shoulder." Also, the ready access to consultation both insures patients good medicine, and an opportunity for a continuing postgraduate training for referring physicians in the group.

The physician in a beginning private practice spends the major part

of his time waiting for patients; meanwhile he will usually lose some measure of his proficiency and realize little income.

Contrariwise, physicians who enter an existing group practice are assured immediately of patients to treat and a sustained income.

The cost of a medical education in a specialty is so high at present that the problem of attaining net income in solo private practice is one which few doctors can afford to face. The trained specialist may not only lose proficiency during the early years of his solo practice, but the "waiting period" represents a tragic waste of ability which is in short supply.

Economy of operation and freedom from administrative detail are other advantages of group practice, especially freedom from the fee collection feature of solo practice. A group of physicians providing general medical and specialist care obviously needs far less space and equipment to practice together than if they maintained separate facilities.

Perhaps one of the most appealing advantages of group practice is the ability to share the emergency work on nights, week-ends and holidays without fear of neglecting patients. Longer vacations and more free time are the rule in group practice. Opportunity for rest, relaxation, postgraduate training, research and a decent family life are possible and more in evidence in group practice than solo.

The patient benefits too from the group which provides his medical care. The caliber of medicine is better by virtue of better facilities, readily available consultation and easy access to laboratory work. His time is economized by the availability of complete diagnostic and consultation service under one roof. This convenience often helps bring him in earlier and more frequently.

The patient benefits by less expensive service or more medical service for his money, since the costly diagnostic equipment of a group is amortized by large volume at low per unit cost. Actual cash saving is often passed on to the patient. The relatively higher ratio of certified specialists in a group has actually stimulated higher standards and quality of medical care in the surrounding community through the example set by the group.

Criticism and obstacles

Group practice is not without criticism. Many of its claimed advantages for physicians and patients are being attacked. Many physicians practicing alone insist that the special facilities of groups are wasted or poorly used. The ordinary solo practitioner has "adequate equipment" for the care of 85% of his patients. The unnecessary "through the mill" treatment of patients would best be reserved for the care of the 15% of patients who require special consultation and diagnostic work-up.

Physicians in group practice allegedly lose their exercise of independent judgment by over-referral to the consultants at their elbow. The professional stimulation of his fellow group physicians is outweighed, it is argued, by his loss of contact with colleagues outside the group. The argument for highly qualified specialists and diagnostic laboratories is countered by the claim that these elements in a group are now generally available outside of groups in all areas with the possible exception of certain isolated rural regions.

There are real obstacles to the growth of group practice, which perhaps explains why approximately 5% of practicing physicians in the United States are engaged full or part time in this mode of practice.

The establishment of a group requires a considerable capital investment for offices and equipment; especially if a group hospital is contemplated. Although lending institutions are more willing to lend money to a group of physicians than to an individual; and although the total investment for a group practice may be less than would be necessary if each doctor were to establish an individual office; such a venture as negotiating a large loan requires high caliber business acumen and leadership which is not always forthcoming. Physicians are not trained in administration.

To establish a group, or even to evaluate the feasibility of joining an existing group, requires some fiscal, legal and administrative understanding.

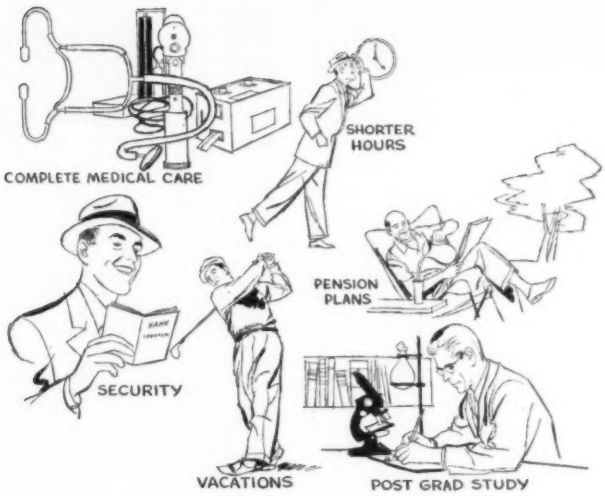
One thing is pretty clear, since the opportunities for practical resident-type training in either solo or group practice are non-existent, you who will make the choice between solo or group practice are generally unaware of the advantages and limitations of both. But of the two, you are probably more correctly informed concerning solo practice.

Success and failure

The most important element of success in group practice is the ability of a group to attract and keep well qualified physicians whose personalities are suited to cooperative joint practice.

A physician's training equips him to dominate the scene of his work. Consequently, some physicians in spite of residence training, are not suited in attitude to group effort and the teamwork practice of medicine. Before considering a physician for a staff position, many groups invite the applicant *and his wife* for a social evening with a "selections committee." This is done in order to better evaluate the applicant's probable "fit" into the group as a person.

Once the staff pattern is set, creating a group of highly skilled and competent doctors practicing as a team under one roof, it is tempting to new men of comparable professional integrity to join; and the group will likely succeed.



The least contributory factor to failure of group practice is total group income. The recorded experience of now defunct groups is that they were able to practice reasonably good medicine, had adequate patients, and group income was sufficient.

The principal problem was income *distribution.*

Although this is the major difficulty in groups composed of 12-18 doctors, most other groups are faced with the problem to a degree.

In smaller groups, however, organizational problems predominate; in larger ones the struggle is for authority and control among members of executive committees and/or specialty cliques.

Not infrequently groups fail to keep good staff members because the advance from a junior partnership is either too slow or is blocked entirely. Internal jealousies over volume of work, coupled with senior partnership status on the part of a low producer has sometimes pointed up the wide discrepancy in income based solely or primarily upon partnership level. In the interest of all group physicians, most authorities are agreed that junior partnership should proceed regularly and in a fixed time to senior status.

Future

There is little doubt that group medical practice will increase in this country. Groups are becoming more common even in New England (many beginning as obstetrical

partnerships) where the fewest groups existed before 1950. The trend is also toward increased size of groups; making them less vulnerable to the effects of the loss of one or two physicians. The experience of groups generally has been that larger groups in larger communities are most successful in surviving over extended periods.

The fee-for-service method of payment for medical care has been partially supplanted by the establishment and growth of various plans employing the insurance principle. Budgeting for illness is a necessity, since the patient is faced with costlier—although more complete—medical care. In any one year almost half the nation's medical bill is shouldered by 10% of its population. Underwriting the costs of medical care, to spread the burden and encourage the early and full use of comprehensive service by prepayment, is clearly indicated, especially for families of low and middle income.

Some say that prepayment for the costs of hospitalization, surgery, obstetrics and other limited services alone, although of considerable aid in meeting costs of expensive services, encourages the use of the costlier services and fails to employ the prevention incentive which is fostered when comprehensive care is insured.

If the ultimate goal of medical practice serving the individual is to employ all of the best techniques for prevention of illness and its sequellae, and accomplishment of this goal is bound up with the quality of medical care and its distribution, then group practice and prepayment for comprehensive medical care probably combine the elements which offer the best potentialities for the practice of preventive medicine and the fulfillment of this goal within our present knowledge of illness, its causes and its cures.

Before jumping into any group practice you would be wise to visit several groups, speak with the junior and senior members in your field of medicine. Explore the possibilities in those communities where you wish to practice.

Here are some questions you might concern yourself with when looking into a specific group:

1. How many years has the group been in existence?
2. What is the composition of the group—by number and by specialty?
3. What hospital affiliations do group members have?
4. How many founding partners, junior partners, and employed physicians?
5. What has been the tenure of the physicians—both partners and employed physicians?
6. How many defections in the past few years? What status was held by the defected members? Why did they leave?
7. Is there a contractual formula for the length of time for suc-

cession to a senior or junior partnership? What are the financial terms in the interim? Usual arrangement calls for salary during a trial or "apprentice period" of one year or less.

8. What specific terms would call for the severance of a partner or probationary physician? What kind of a vote is required to separate a physician from the group? Two-thirds or three-quarters is the usual.
9. Does the group have a business manager? How long has he been employed by the group?
10. Are there any family ties between members of the group?
11. Finally, and you may determine this only through rather indirect and discreet sources, are there any social relationships among members of the group which you must share in order to "get along" with the group—or can you be reasonably free to pick and choose your own private mode of living outside office hours?

The elements of group practice described here should give you a basic understanding of its organizational pattern of medical services, and help you make a more informed judgment of it. The overwhelming weight of opinion being advanced at the present time clearly indicates that group practice is a growing element of medicine in our era, and that it will play an ever-increasing role in the development of higher quality, comprehensive medical care at the private practice level. However, the decision to become associated with an existing medical group or join in the establishment of a new one requires consideration of *all the practical matters in the particular opportunity.**

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* A comprehensive survey of medical group practice in the United States is being conducted jointly by the American Medical Association, American Association of Medical Clinics and the National Association of Clinic Managers. The information thus gathered will update some of the material presented here.

Number eleven of a series from leading medical centers

Clinico-Pathological Conference

U. S. Naval Hospital, Philadelphia, Pa.

Present illness

This 22-year-old patient stated that he was in good health until September of 1952 at which time he developed pain in the right lumbar area and right leg.

The pain was described as being a dull, more or less constant ache, which lasted over-night and disappeared in the morning only to recur again at night. Orthopedic consultant advised heel lifts which were without effect.

He stated that he could not lie on his back, but found that lying on either side with his knees flexed would relieve the pain somewhat. Studies at that time, including x-rays of the lumbo-sacral spine and intravenous pyelograms were reported as normal. However, his presenting symptoms persisted intermittently.

In January of 1953 he developed "mumps" during which his right testicle became swollen, but no parotid swelling or tenderness occurred. Following this he was seen at his local dispensary and a suspensory was used to relieve the pain in the right testicle.

Later in January, 1953, the patient was admitted to the hospital for study with a diagnosis of acute epididymitis on the right side. He was treated at that time with bed rest, the usual conservative methods and various antibiotics. The right testicle decreased somewhat in size and his symptoms improved, but four weeks after admission, a right orchiectomy was performed. The patient's post-operative course following this procedure was essentially uneventful. However, in

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March, 1953, he was transferred to another Naval Hospital for further study and treatment.

Physical examination

Upon arrival at the second Naval Hospital, physical examination revealed a healing incision of the right scrotum and a large, hard, fixed mass, the size of a melon, in the right lower quadrant.

An intravenous pyelogram demonstrated the right mid-ureter markedly deviated to the midline but without obstruction.

A retro-gastric space study suggested that the lower aspect of the stomach was thrust anteriorly.

All other studies including a chest x-ray, chorionic and pituitary gonadotrophins, complete blood count and urinalysis were essentially negative.

An effort was made to reduce the right lower quadrant mass by giving nitrogen mustard 7.5 mgm. daily for six days. No appreciable change in the size of the mass was noted.

Approximately three weeks after admission to the second Naval Hospital an exploration of the right retroperitoneal space was done. The mass in the right lower quadrant was firmly fixed to musculature of the area and appeared to involve some of the lumbar plexus. Coursing through it were the obturator artery, the right external iliac artery and vein. Lymph nodes the size of walnuts were scattered over the inferior vena cava up to and surrounding the kidney pedicle. The patient's post-operative course, following this procedure, was uncomplicated.

He received deep x-ray therapy through ten portals: supraclavicular fossa 2330 r; dorsal vertebrae anterior border 5145 r; upper border, lumbar vertebra 5250 r; anterior border, lower lumbar vertebrae 6850 r. The patient tolerated this radiation therapy well. However, he did require multiple transfusions during and following treatment to maintain adequate hemoglobin level. The mass in the right lower quadrant became somewhat smaller. Following this procedure, chest x-ray, retrogastric space studies, chorionic and pituitary gonadotrophin levels and intravenous pyelograms continued essentially negative.

In October, 1953, the patient complained bitterly of lumbosacral pain. A neurological examination did not reveal any significant positive findings. During the last two weeks of hospitalization the right lower quadrant mass again became palpable and increased rapidly in size. He was given general supporative measures including repeated whole blood transfusions, but his clinical course was progressively downhill and the patient expired during the latter part of October, 1953.

Discussion

Dr. Parker: This is essentially the story of a 22-year-old white man who developed right sided back pain

and right leg pain which were not relieved by the usual local conservative measures or orthopedic measures. He continued with these symptoms for approximately four months at which time he developed so-called "mumps" and at that time a swelling was noted in the right testicle.

The history is not definite as to whether he actually had mumps.

At no time is there any mention of enlargement of lymph nodes or swelling of the neck.

From the course, subsequently, I would feel that the diagnosis of mumps was based on the orchitis which was present. The testicle was treated conservatively for approximately another month and was then removed, this being five months after the onset of the symptoms.

There was no evidence of any lesion in the chest, and no evidence of any lesion in the neck. Surgery revealed an inoperable situation with extensive retroperitoneal nodes. Following this surgery the patient did very poorly. He had no response to either nitrogen mustard or to x-ray therapy.

In reviewing the possibilities which might give rise to this course of events, it seems to me the most likely thing would be a retroperitoneal tumor, either primary or metastatic. The retroperitoneal space may give rise to lymphomas which are certainly fairly common; but at least in my experience it is not common for the lymphomas to involve the testicle. I have seen only one case, a lymphosarcoma, involving the testicle, and in that case it was impossible to determine whether it was a primary lesion or whether it was secondarily involved. The metastatic carcinomas which can involve retroperitoneal nodes include, of course, the testicular tumors, and pancreatic tumors. I think in this boy, with the involvement of the testicle, the most probable diagnosis is testicular tumor; the first symptom being caused by the metastatic lesions in the retroperitoneal space.

Whether the original tumor was palpable at the time his symptoms first presented is, of course, questionable. It is perfectly possible that it was there and was missed because that is not an unusual sequence of events. Approximately 20% of the testicular tumors will produce their first symptoms by reason of metastatic lesions, usually retroperitoneal nodes. Occasionally they will be directly to the lungs or into the cervical nodes. When I first read this and thought of the mumps, I wondered if possibly he had metastatic nodes in his neck and hemorrhage and necrosis into the tumor bringing on the attack of orchitis. I would feel that he did have hemorrahge into the tumor but there is no mention of lymphadenopathy or swelling of the neck.

The type of testicular tumor to pick is a problem. Certainly I think you can rule out seminoma for the lack of response to x-ray therapy. Choriocarcinomas do not metastasize

primarily to lymph nodes. I also think one would find more extensive metastatic lesions in the lungs. I think the choice lies between teratocarcinoma and embryonal carcinoma. I know of no way of differentiating the two, save histologically. The fact that the hormone studies were negative and the chest x-ray was negative, is no help since these are not necessarily positive in either of these types. I think to differentiate any further is a question of tossing a coin and I would pick, probably, embryonal carcinoma although I have no actual reason for so doing.

Malignant process

Dr. Bauer (Medical Service): I don't think I can enlarge on the diagnosis as I am in general agreement with what has already been said. However, there are several features in this protocol which deserve emphasis and may help to steer a course to a more exact diagnosis.

The duration of illness, from the first symptom to the time of death, was little more than a year, certainly pointing to a very malignant process. The clinical features indicate a tumor mass which was located in a specific area. By history and physical examination, as well as by laboratory and x-ray findings there was no specific organ involvement and there was no generalized lymphadenopathy. The single exception was the right testicle which seems to incriminate itself by its persistent enlargement. There was never any mention of a "true mumps" and the description of the pain doesn't fit the exquisite pain and tenderness associated with mumps orchitis. Moreover, the testicle almost always either undergoes complete resolution or atrophies following an attack of mumps orchitis. Certainly a chronically enlarged and tender gland would not be found. More likely a tumor was present in the testicle originally and attention was drawn to that organ at the time of the original episode of mumps.

Consideration of the duration of disease, spread of tumor, x-ray sensitivity and gonadotrophic titer allows one to postulate about the type of testicular tumor present. Embryonal carcinoma and choriocarcinoma would probably have metastasized much more widely while the seminoma would have more likely remained in the ipsolateral retroperitoneal space.

Choriocarcinoma is almost always associated with high titers of gonadotrophic hormones; embryonal carcinomas with some elevation and the seminomas with no elevation. If we conclude that this tumor had some x-ray sensitivity we can again exclude choriocarcinoma and to a lesser extent, embryonal carcinoma.

Hence we are left with seminoma which usually has a very high degree of x-ray sensitivity. The choriocarcinoma is fatal within three to six months; the embryonal carcinoma lasts somewhat longer, up to

two to three years, but of the three, the one that is more likely to go on for longer than a year without generalized metastases is the seminoma.

I suggest that the seminoma is the one more likely to be held up at the retroperitoneal area and that the others are more likely to spread to more distant areas. This type of reasoning makes the final diagnosis of seminoma more likely than either of the other two.

Dr. Parker: I would like to comment about the metastatic lesions. I believe that any of the testicular tumors, or all of them, except the choriocarcinoma will metastasize directly to the lymph nodes on the same side. Subsequent metastatic lesions of course, are extremely variable, but I think the first nodes involved in the group that are involved here on the right side and I don't believe you can pick the type of tumor by the area that is first involved with the metastases because actually the testicular tumor metastasized to the lymph nodes along the aorta. If tumor involves the epididymis you get involvement of the iliac nodes.

Dr. Pope: Were a barium enema and a G. I. Series done in this case?

Dr. Langston: A G. I. series was done seven months prior to death. At that time anterior displacement of the lower part of the stomach, such as would be by a retroperitoneal mass was demonstrated.

Dr. Yood: The only films I have are those taken during his final admission to this hospital. We note, multiple, small discrete nodules throughout both lower lung fields. They represent metastatic lesions. Such metastatic lesions are seen in testicular tumors with a hematogenous spread—tumors which would be of the teratocarcinoma group. The survey film suggests a large, soft tissue mass in the right lower abdomen. This is further born out by the deviation of the right ureter toward the midline. The left kidney shows normal size, contour and excretion. The calices on the right are not well outlined. Part of this might be due to irritability. I can see no evidence of actual involvement of the kidney. Its axis and size appear normal. In the film of the pelvis we see a large osteolytic lesion in the descending ramus of the ilium. There is no other evidence of bone metastases present.

The x-ray findings in conjunction with the history are indicative of metastatic retroperitoneal node involvement with further spread of metastatic disease to the lungs and to the ilium.

Dr. Redfield: The following are the principle pathologic diagnoses:

1. Right orchiectomy and regional lymph node dissection for embryonal carcinoma, February, 1953.

2. Metastases of embryonal carcinoma, right testicle to lungs, liver and right iliac lymph nodes; jaundice moderate. Icteric serous pleural effusion, bilateral, (500 cc. on each side).

Figure 1. Small hemorrhagic tumor upper pole of testis. (Fig. 44 from section VIII —fascicle 32, Atlas of Tumor Pathology, Tumors of the Male Sex Organs, by Frank J. Dixon and Robert A. Moore, published by the Armed Forces Institute of Pathology, Washington, D. C.)

3. Icteric serous ascites with 2,000 cc. present.

Autopsy

At autopsy the body was that of a well developed, well nourished white man of about 23 years. A healed surgical scar extended along the anterior right lateral aspect of the abdomen from the level of the 10th rib to the inguinal ligament. The right testicle was absent. There was moderate icterus. This was due to extensive metastases to the liver which weighed 4600 gms., (normal 1,600 gms.) The abdomen was distended not only by the large liver, but by 2,000 ml. of icteric ascites, due not only to the extensive liver involvement but also a large firm mass of matted lymph nodes containing metastatic tumor about the right pelvic and inguinal blood vessels. The lungs were also enlarged due to extensive metastatic tumor. Bilateral icteric serous pleural effusion due to pleural involvement by tumor was present. No other pertinent abnormalities were found.

Here are gross photographs of typical embryonal carcinoma of the testicle. The first slide (Fig. 1) shows a small, poorly defined, hemorrhagic tumor in the upper pole which might also be suspected to be choriocarcinoma. The next slide (Fig. 2) shows a more bulky tumor with

Figure 2. Bulky hemorrhagic and necrotic tumor in a testis. (Fig. 45, Ibid).

hemorrhage and necrosis. Seminomas, infrequently seen in this age group, are usually smaller, firmer, better demarcated tumors. Teratocarcionomas may be difficult to suspect grossly unless they show good structural differentiation such as cyst formation or one is able to distinguish bone or cartilage in the tumor. Choriocarcinoma is unique as a hemorrhagic, necrotic tumor. Cases have been reported where this tumor apparently destroys itself at the primary site, but it is invariably fatal and the most malignant germinal tumor of the testicle.

Histologically, there are three patterns for embryonal carcinoma of the testicle: First, is the undifferentiated pattern illustrated in the next two slides. This one (Fig. 3) shows typical cellular irregularity with suggestive lobulated pattern, but poorly defined stroma and cell borders better shown this higher power (Fig. 4). The second pattern is that of somatic differentiation. This slide (Fig. 5) shows a well defined adenomatous pattern which is sometimes called adenocarcinoma of the testis. Finally, there is a pattern of trophoblastic differentiation as in this slide (Fig. 6). Here the cells begin to look like multinucleated giant cells such as are seen in the syncytial trophoblast of a placenta. One must consider the diagnosis of choriocarcinoma, with embryonal carcinoma if

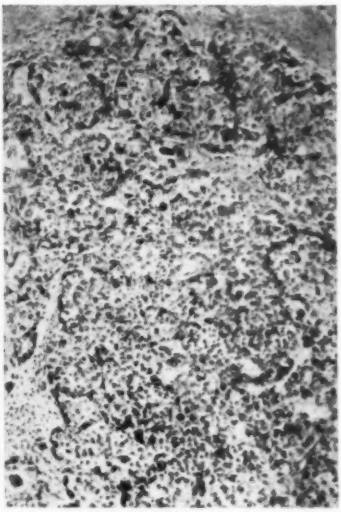


Figure 3. Photomicrograph X 86 of undifferentiated pattern in embryonal carcinoma of testis. (Fig. 48, Ibid).

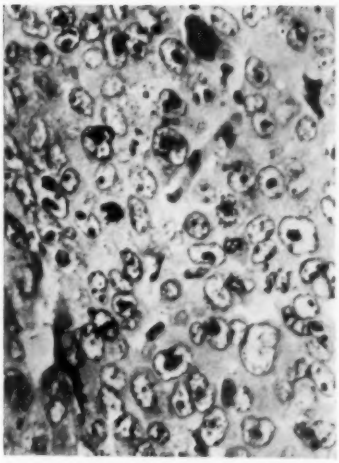


Figure 4. Photomicragraph X 437 of undifferentiated pattern in embryonal carcinoma of testis. (Fig. 49, Ibid).

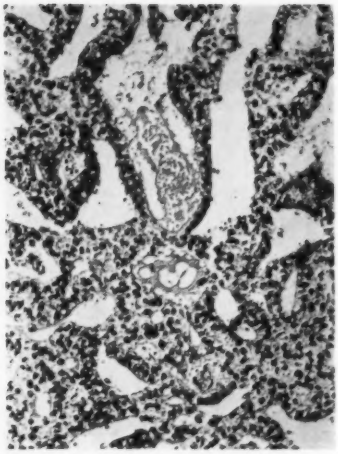
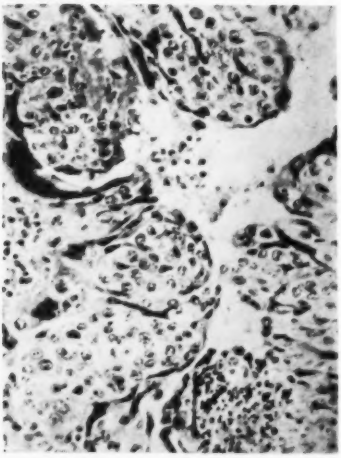


Figure 5. Photomicrograph X 103 of somatic differentiation (adenomatous pattern) in embryonal carcinoma of testis. (Fig. 54, ibid).

Figure 6. Photomicrograph X 173 of trophoblastic differentiation in embryonal carcinoma of testis. (Fig. 53, Ibid).



these structures are frequent or prominent.

This mixture of types is a fact in many, if not most malignant germinal tumors of the testicle. In practice, any combination or all of the three patterns described may be seen in a single case if multiple blocks are taken. Furthermore, other types of carcinoma may be present. This was studied in much detail by Dixon and Moore in their own material and cases sent to the Armed Forces Institute of Pathology. These workers, on the basis of not only morphological but clinical data (i.e.: presence or absence of pain, urinary gonadotrophin, whether or not metastases are present at first examination or local extension is seen), have divided testicular germinal tumors into five groups. The annual mortality was determined in a study of almost 1,000 cases (slides) as follows:

Our case agrees with the statistics. In closing, perhaps a few of the clinical features of our case should be remarked upon. The initial onset with lumbar pain in retrospect should have called attention to the scrotum since innervation is similar. I think the orthopedist will agree a urological workup is indicated in back pain of obscure cause. The diagnosis of mumps is difficult to justify in the absence of parotitis. The testis enlarges gradually in most embryonal carcinoma, but in about 10% rapid swelling occurs. Pain is present in over half of the cases. Two thirds have symptoms less than

ANNUAL MORTALITY 1ST FIVE YEARS AFTER OPERATION

Testicular Germinal Tumors

Rates represent deaths per 100 survivors beginning each year

GROUP	Years after operation 1st	2nd	3rd	4th	5th
(I) Seminoma	3.2	3.3	3.2	1.2	—
(II) Embryonal carcinoma with or without seminoma	40.1	30.7	9.8	2.0	2.7
(III) Teratoma with or without seminoma	22.1	5.4	2.0	2.2	—
(IV) Teratoma with or without embryonal carcinoma and/or choriocarcinoma and with or without seminoma	30.6	24.9	7.5	0.9	—
(V) Choriocarcinoma with or without embryonal carcinoma and/or seminoma	*—	—	—	—	—

*No figures due to small numbers of cases, few of which survived one year.

six months. Urinary gonadotrophin studies were not done preoperatively in this case and were negative postoperatively. About 30% of cases in this group are positive preoperatively and half of these are positive postoperatively. Most workers believe the presence of gonadotrophin is due to the presence of trophoblastic tissue whether or nor demonstrated histologically. The presence of pain, positive urinary gonadotrophin test and metastases indicate a poorer prognosis. Retroperitoneal node dissection seems to prolong survival. In 32 cases of embryonal carcinoma, of Dixon and Moore, 44% died within two years, while of 125 cases not given lymph node dissection 63% died within two years. Perhaps the radiologist will say a few words about the effectiveness of irradiation.

Finally, the question of cryptorchidism. In the Army series of 24 tumors in undescended testes, the majority, 17, were seminomas. The expectancy that tumors will develop in an undescended testis is slightly more than 11 times that for a scrotal testis and, if the testis is intra-abdominal, there is a 4 times greater chance of tumor developing than if it is inguinal.

To put it another way, about 1 in 20 abdominal testes undergo malignant change and 1 in 80 inguinal testes. So far as I know, no one has developed statistical data on the development of tumors of the testes which have been brought down into the scrotum surgically or by using hormones, but it is my impression that the chance of tumor developing

is still higher than if the testis is in its usual site to begin with and that the chance of a cryptorchid testicle assuming normal function decreases the longer one delays in bringing it down. I hope that one of the urologists and perhaps a pediatrician will say something more about this.

In summary then, we have reviewed a case of embryonal carcinoma of the testicle in a young, white man whose symptoms began about one month prior to surgery and who died approximately two years later with local and distant metastases, pleural effusion, jaundice and ascites.

Dr. Cangelosi: Well, this is an interesting case. It demonstrates how difficult it is to make this diagnosis early, even when you are looking for it. These carcinomas of the testes have so many of the attributes of acute inflammatory pathologic change that making the diagnosis early can be very difficult. The next thing I would like to mention is this question of undescended testes. There is a tendency now toward operating children very early. As early as 3 to 5 years old. That's something new. Up until a very short time ago we used to operate them just about or just before the age of puberty. There is no evidence that bringing the testis down decreases the incidence of malignancy of testicular tumor. To the contrary, the evidence seems to be that the tendency to malignant change is just as high in the scrotum as in the abdomen. That is, once they are brought down. There is also considerable evidence that the undescended testis is not a normal testis at any stage of the game except very early, up until the age of 4 or 5, and, after that, no matter what is done to the testicle, it is definitely abnormal histologically.

Another point worth mentioning is that the collection of statistics of large numbers of cases of testicular tumors is extremely difficult. Many urologists practicing privately may go a lifetime only seeing 2 or 3, and some not that many, cases of carcinoma of the testicle. It is only in these large military establishments and hospitals that we see them in any great number. Freedman and Moore were able to collect the colossal series, really, of cases of testicular tumor only because they were at a central point at the Armed Forces Institute of Pathology where the cases were funneled from all over the world. They did not see these cases clinically. These are only cases they received slides on and they got reports on them. There are very, very few institutions that can hope to accumulate more than a handful of cases, even over a period of years of testicular tumors. So you can see the difficulty in studying these cases.

Dr. Bauer: I might say that there are certain discrepancies between the x-ray reports on the protocol and the x-ray findings presented. I would like to know one thing about

the x-rays. Did the finding in the pelvis represent a true lytic lesion of bone? As I recall the incidence of metastases of testicular tumor to bone is fairly low and I should like to inquire if the pathologist demonstrated a lytic lesion of bone or if it were a pressure phenomenon from the tumor mass?

Dr. Yood: Is appears to be an osteolytic lesion. Do the pathologists have a report on this area?

Dr. Redfield: X-ray reports prior to death do not suggest any skeletal metastases. It is not customary to make sections of other than vertebra unless lesions are suggested by roentgenograph.

Dr. Dickson: I have a word to say. I am extremely interested in this problem since I personally am just beyond the 7 year period with an embryonal carcinoma which falls in group three. I have talked with all these people who have studied this problem. Freedman and Moore made their report of 952 cases, I believe it is, in 1946, on material that came from all over the world to the AFIP; and the statistics were very poor then. However, Lloyd Lewis who was the urological consultant for the Army had done about 340 Hinman operations, i.e., the regional node dissection immediately following orchidectomy. As soon as he had a frozen section or a pathological diagnosis of any of these tumors, he immediately did a complete node dissection up to the diaphragm and back down again and a couple of years later he told me he thought that his statistics were improving a great deal because the approach was a surgical one and every time a tumor recurred it tended to recur locally in the lymph nodes and therefore he advocated cutting them quick and cutting them often. He kept them alive a little bit longer even in those that had metastasized to the regional lymph nodes. I was interested in that point here because it seemed to be several weeks after the orchidectomy that this boy had his regional node dissection.

Dr. Yood: I think that the remarks just made about node dissection are of importance also as far as the radiological approach is concerned to refer again to Freedman who has had more experience than anyone else. His recommendations are for a complete node dissection up to the region of the renal arteries with all types of testicular tumors except the seminoma. In the seminoma this isn't necessary, primarily because seminoma is so radiosensitive. Approximately 500 to 1000r tumor dose in two weeks will hit most seminomas. If the treatment is protracted, the dose goes up to approximately 1500 to 1800r in 4 weeks. The other tumors are not very radiosensitive, with the exception of a few atypical teratocarcinomas or tropho carcinomas, whichever way you care to classify them. These atypical types will respond approximately the same way as the seminoma; with the teratocarci-

nomas, the tumor lethal dose depends on what the most resistant component in the teratomatous tissue is. This can vary from 3500r in two weeks for a tissue that is primarily epidermoid up to 5500-6000r in two weeks for an endodermal type of tissue. If it is an immature teratoma you can cut approximately 25% off this dose. The problem that comes up is to try to get this dosage into a tumor which is comparatively deep without going over skin tolerance. You are well aware that you are going to get a brisk dermatitis. To get 5000 or 6000r into a periaortal or perivenacaval mass in a short period is practically impossible with conventional 250 KV. therapy. The smaller doses you can get in. You can get in 3500 or even 4000r with luck and with a thin patient. Work has been done with supervoltage therapy. Freedman ran quite a few cases at Walter Reed during the war. He got his dose in but when he was getting 5000r into tumor he was also punching holes into the gastric mucosa and the small intestine due to radiation ulcers. In spite of that he advocates supervoltage. Surgery is indicated for the gastric emergencies.

Perhaps a better approach would be a combination supervoltage therapy and rotation therapy. Then it would be possible to get approximately 5000 or even 6000r into a tumor in the central axis without running the risk of giving too high a dose to the gastric mucosa or small intestines. Fortunately, 40% or 45% of these tumors are seminomas which are so markedly radiosensitive that such a high dose is not required. With routine treatment and 250 KV. therapy you ordinarily try to set up five portals for treatment: an inguinal portal on the side that the tumor has occurred and then anterior and posterior opposing portals over the lower abdomen and the epigastric region. If there has been spread beyond that, the supraclavicular node (Virchow's node) is the one usually involved. That can be treated.

Some advocate mediastinal treatment. Here one runs the risk of an irradiation pneumonitis. With 250 KV. therapy, as with supervoltage, rotation has a great deal to offer. The tumor dose at the axis can be high without exceeding skin tolerance or damaging most of the intervening structures. As far as I know, the best survival rates result from a combination of surgery and irradiation.

Dr. Langston: In summary, this is the case of carcinoma of the testicle of a 22-year-old male. There was considerable delay in arriving at a diagnosis. This delay, however, was probably not therapeutically significant. This patient's first symptoms of back pain were, in all likelihood, the result of metastases. He thus belongs in the 20% whose first symptoms are due to their retroperitoneal metastases. The diagnosis of mumps-orchitis, in the ab-

sence of a clearcut parotid involvement and the diagnosis of epididymitis in the absence of a history of infection or trauma should have been made with more caution or rather the signs which led to this diagnosis should have excited more suspicion. The age of onset, course, lack of response to irradiation and the time from first symptoms to death are typical of this type of testicular tumor.

Degree Programs and Investigation

Raymond D. Pruitt, Professor of Medicine and Associate Director, Mayo Foundation for Medical Education and Research [Journal of the American Medical Association, 161:33 (1956)], believes that the discussion of investigation as part of an ideal residency program renders appropriate a consideration of investigative activity as a desirable component of the daily existence of a medical specialist. He delineates three categories of medical specialists and a kind of experience in investigation appropriate to each. (1) *Clinician.* His working hours are devoted to the care of patients. His is the responsibility of supplying patients with the best of medical care. It seems imperative that residency programs produce more of this type of specialist. Training should emphasize pathologic anatomy; also, clinical physiology is desirable. (2) *Career Investigator.* This man as a student may not be aware of his life's work. An introduction to investigation during his residency training may determine his course. (3) *Clinician-Investigator.* In this category are those whose interests and activities are a composite of the other two. The clinician will bring to the laboratory a perception of crucial clinical issues and a sense of orientation and direction. Too, the clinician who aspires to contribute to the knowledge of disease will find need of concepts derived from fundamental sciences of physiology or biochemistry. If the clinician-investigator can be justified, the residency program should allow time free of clinical responsibilities to make use of available laboratory facilities. The program arrangement as to time for this type of student requires careful consideration and planning.

Guest Editorial

By Capt. E. C. Kenney, (MC) USN

THE NATIONAL NAVAL MEDICAL CENTER has evolved over the years as a result of the growth of the U. S. Navy, and more directly as the result of increased medical requirements of the Navy. At the present time it is located in Bethesda, Maryland, and occupies a physical plant which was first placed in use in 1942.

In 1802 the first Naval Hospital in Washington, D. C., was established. All told there have been eight such institutions in eight different locations, including the present one. On June 20, 1935, the first Naval Medical Center was established by authority of the Secretary of the Navy, and it consisted of a Naval Hospital and a Naval Medical School. On February 5, 1942, the present National Naval Medical Center was commissioned.

The National Naval Medical Center is composed of the following component commands: U. S. Naval Hospital, U. S. Naval Medical School, U. S. Naval Dental School, U. S. Naval School of Hospital Administration, and Naval Medical Research Institute. Each of these commands has its own special mission or missions; however, in the final analysis their energies are directed towards the same common goal—to provide the Navy, its personnel and dependents with the best possible medical care from the standpoint of therapeutic and preventive medicine.

As the Center has grown in size it has grown in importance to the entire Medical Department of the Navy. Available facilities include a 1000-bed hospital for the diagnosis and study of all

E. C. Kenney
Capt. (MC) USN

Commanding Officer,
National Naval Medical
Center, Bethesda,
Maryland

diseases and the treatment of most diseases. Equipment includes such unusual items as a two-million volt x-ray therapy unit; a complete radioisotope laboratory; a tissue bank; and a blood bank. Approved post-graduate tråining of the residency type for Medical Officers is provided in almost all of the specialties. Courses for Medical Officers of special importance to naval medicine are continuously being taught. Advanced training and post-graduate courses for Officers of the Dental Corps, Nurse Corps and Medical Service Corps are provided. Members of the Hospital Corps are constantly being trained as technicians in almost all departments of the Center. Medical Research conducts basic and applied research in all branches of the biological sciences as well as the medical aspects of the utilization of atomic energy. Medical problems peculiar to the Naval Service are carefully studied and practical solutions are sought. The clinical laboratories perform special examinations of any type for medical activities of ships and stations scattered over the world. These are usually tests or studies which require specially trained personnel for interpretation or those that are technically difficult and require highly specialized equipment and supplies.

The Edward Rhodes Stitt Library provides Medical Department personnel of ships and stations with books and periodicals on a temporary loan basis.

This organization as a whole, therefore, functions as a medical, dental, diagnostic, educational and research center.

By the above activities, a close relationship and spirit of cooperation are stimulated among all medical activities and medical department personnel. The professional environment of the National Naval Medical Center, generated by the knowledge and ability of seasoned and experienced Medical Department personnel in exploring new methods of diagnosis and treatment, of caring for the sick and injured, of training personnel to more adequately carry out their duties, along with the other functions of the National Naval Medical Center, would seem to be a major factor in maintaining medical practice throughout the Navy at a high level of excellence with benefits accruing to the Navy as a whole.

National Naval Medical Center

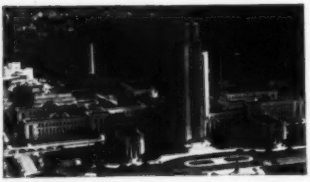
Bethesda, Maryland

The National Naval Medical Center occupies a 242-acre site in the Bethesda-Chevy Chase area of eastern Maryland. The Center is one mile from downtown Bethesda, ten miles from the United States Capitol building, and five miles south of Rockville, Maryland. Its extensive grounds are beautifully landscaped and the nineteen-story tower of the central group of buildings commands a picturesque panorama of the countryside. Immediately across from the Center is the imposing group of buildings forming the largest clinical center of the National Institutes of Health.

Component commands

The National Naval Medical Center functions much as does a naval base, with a Center command and commander providing military guidance and direction, coordination,

The National Naval Medical Center with its impressive, 19-story central tower.



HOUSE OF MERCY

A bubbling pool and tiny stream beside an old spring house north of Bethesda, Maryland, brought to the mind of President Franklin Roosevelt the healing pool of Jerusalem (John 5:2). Bethesda means "House of Mercy," an appropriate site for a new Naval Medical Center and Hospital.

So on the afternoon of July 5, 1938, while standing in the middle of a cabbage patch on a farm in Bethesda, the President tapped the ground with his cane and said "We will build it here."

Ground-breaking ceremonies were held on June 29, 1939; the President laid the cornerstone on Armistice Day, 1940, and the newly constructed Center was officially commissioned on February 5, 1942.

control and logistic support for the component commands comprising the Center.

Hospital

The Naval Hospital is a general hospital and diagnostic center with over 1119 beds. There were 13,548 patients admitted last year, with a total of 289,874 patient days. The hospital is designated as a treatment center for cardiovascular surgery, neurosurgery, plastic surgery, oncology, neurology, surgery of the deaf, tropical diseases and acrylic ocular prosthesis. Active and vigorous resident and intern training programs are conducted which are approved by the A.M.A. Council on Medical Education and Hospitals and the various Specialty Boards.

Postgraduate school

The Naval Medical School provides postgraduate training for Naval Medical Officers, technical training for naval enlisted personnel, and correspondence course training. In addition, the School furnishes clinical laboratory services to the Naval Hospital. The justly popular Tissue Bank is part of the Medical School Command. Many of the pioneer discoveries and techniques in this field

of tissue transplantations and storage came from this unit.

Dental

The Naval Dental School provides postgraduate dental training for dental officers and technical training for enlisted dental personnel, as well as correspondence course training. In addition, the Dental School provides clinic service for patients and staff of the Center. The Medical School and Dental School were largely responsible for the publication of the splendid Armed Forces Color Atlas of Pathology and Oral Pathology. These excellent texts have found their way into medical libraries all over the world and represent an important contribution.

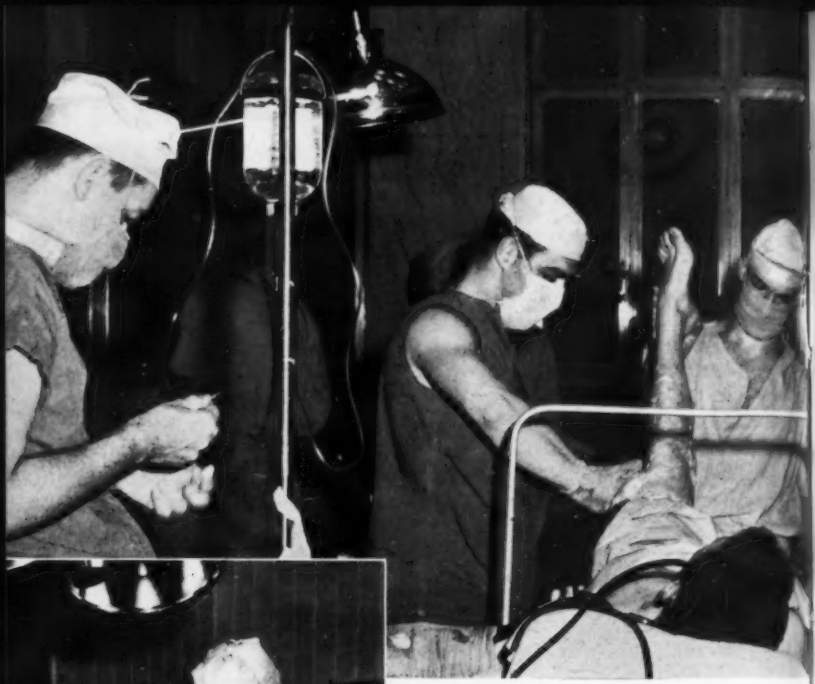
Research unit

The Naval Medical Research Institute conducts basic and practical research in many fields of importance. Valuable contributions in the fields of submarine medicine and physiology, radiation, arctic medicine and many others have come from the laboratories of the Institute.

The School of Hospital Administration provides training courses in medical administrative technique for both officers and enlisted personnel.

All components of the Center are staffed with outstanding professional and administrative personnel in their separate fields; are equipped with the latest in professional and scientific equipment; and the Center

Scheduled lectures and conferences add to formal training offered residents at the Center. Below, residents "line the rail" at a gross pathology lecture.



Surgical teamwork is stressed in Navy's graded residency program leading to board qualification in general surgery and in the surgical subspecialties.

enjoys a fine reputation in the fields of military and civilian medicine, both here and abroad.

Housing

The hospital is situated in a rapidly expanding suburban residential area. Homes and apartments are available for rental or purchase in any of the surrounding communities of Bethesda, Chevy Chase, Rockville, Wheaton, and Silver Spring. The

Navy's residents in psychiatry have an opportunity to develop controlled and continuing relationships with patients. Here, resident conducts group therapy.

Center command operates a central housing office and maintains a listing of available housing in all price ranges. Unmarried officers' quarters are available on the station.

Recreation

The Naval Medical Center supports a large and varied recreation program which is available to patients, staff personnel, and dependents. A nine-hole golf course surrounds the station. A beautifully wooded picnic area, complete with a small pond stocked with fish, makes up the Center's Stone Lake Reservation. The latter is often the site of private or departmental picnics. Athletic fields, tennis courts, swimming pool, gymnasium and bowling alleys are available on the station. Intramural and varsity sports play a large part in the recreation program. The officers' club offers a fine restaurant and night club atmosphere complete with floor shows for late evening enjoyment. Nearby metropolitan Washington, D. C. with its countless historical and cultural attractions rounds out a broad and valuable "extra curricular" life for the resident physician at Bethesda.

Residencies and internships

The residency training programs at the National Naval Medical Center embrace fourteen medical and surgical specialties. All are approved by their respective specialty boards. Residencies are awarded to medical officers of the U. S. Navy after approval of applications by the Bureau of Medicine and Surgery.

A rotating internship, consisting

U. S. Naval Hospital, Bethesda, Md.
Residency Training Programs

Service	Duration	No. of Residencies
1. INTERNAL MEDICINE	3 years	9
2. CARDIOVASCULAR DISEASE (only for trainees holding certification by the American Board of Internal Medicine)	1 year	2
3. SURGERY	4 years	8
4. ANESTHESIOLOGY	2 years	4
5. OPHTHALMOLOGY	3 years	3
6. OTOLARYNGOLOGY	3 years	3
*7. ORTHOPEDIC SURGERY (includes 1 year in children's orthopedics at an approved civilian hospital and 1 year of general surgery)	4 years	6
8. UROLOGY (includes 1 year of general surgery)	4 years	4
*9. NEUROLOGY (a third year is given at an approved civilian hospital)	2 years	2
10. PSYCHIATRY	3 years	7
11. OBSTETRICS & GYNECOLOGY	3 years	6
12. PEDIATRICS	2 years	5
*13. RADIOLOGY (includes 4 months of radioisotopes; third year is given at an approved civilian hospital, including radium therapy)	3 years	3
14. PATHOLOGY (U. S. Naval Medical School)	4 years	8

* Program is carefully coordinated with civilian institutions to assure continuity and adequacy of training and to leave no area of training unprovided for.

Photos courtesy U. S. Navy

of four months of internal medicine, four months of surgery, and two months each of pediatrics and obstetrics-gynecology is also offered. There is a four week period during the internship year for an elective assignment.

Advantages

The residents and interns at Bethesda often have advantages not available to some of their civilian counterparts. The patients in a naval hospital are nearly all utilized for instruction and training without the "private patient" differentiation of some civilian institutions. The majority of the patients in the hospital are Navy personnel and their dependents from the Washington, D. C. area. Another unique advantage of this institution as a training hospital is that it acts as a referral center for many non-teaching type naval hospitals and naval installations in the United States, and indeed for much of the Navy over the world. Thus, patients with rare and exotic diseases are seen, as well as the more common types.

The present dependent policy assures an active and busy pediatric and obstetrics-gynecology service. For the young physician's experience, Navy and Marine Corps retired personnel and Veterans Ad-

On station recreation for residents and dependents includes picnicking, fishing, swimming, golf, tennis and bowling.

anxiety

is part of every illness

in physical sickness—anxiety

. . . is a threat to progress, barrier to therapeutic response, intensifier of symptoms[1]

1. Braceland, F.J.: Texas State J. Med. *51*:287 (June) 1955.

in anxiety . . . EQUANIL

. . . fosters rapport, promotes equanimity, relieves muscle tension, encourages restful sleep[2]

2. Lemere, F.: Northwest Med. *54*:1098 (Oct.) 1955.

Plus your individualized specific management

Supplied: Tablets, 400 mg., bottles of 50.
Usual Dose: 1 tablet, t.i.d.

MEPROBAMATE
(2-methyl-2-*n*-propyl-1,3-propanediol dicarbamate)
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anti-anxiety factor with muscle-relaxing action

Wyeth
Philadelphia 1, Pa.

*Trademark

ministration patients assure an adequate representation of the geriatric group.

In addition to in-patient work on the hospital wards, busy outpatient clinics are conducted in surgery, EENT, obstetrics-gynecology, pediatrics and other fields. An active emergency room is also staffed by the interns and residents.

Professional staff

The professional staff of the Naval Hospital consists of an assigned staff of both regular and reserve medical officers, a consultant staff of civilian physicians and surgeons, and a house staff composed of interns and residents. The house staff members represent many of the medical and surgical specialties.

National Naval Medical Center Conferences and Clinics
Typical Monthly Schedule

MONDAYS—July 2-9-16-23-30

Subject	Time	Location
Staff Conference & General Rounds, Pediatric Serv.	0830	T-5, T-6
Orthopedic X-ray Conference	0830	Conf Rm 5-C
Fracture Clinics, Drs. Peacock, Schechter, Egan	0900	Plaster Rm
General Surgical Conference, Chief of Surgery	0900–1100	Wd 4-C Office
Gynecology Clinic	0900–1200	Wd 130
Proctology Conference	1300–1400	Wd 103
Orth. Dependent Outpatient Cl., Drs., Doolittle, Risi, Muehe	1300	Wd 130 Orth Cl
Prenatal Clinic	1300–1600	Wd 130
Pathological Microscopy Autopsy Review by Pathology Staff	1300–1400	Rm 325 Mldg 1
Orthopedic Inpatient Clinic, Dr. Foley	1300	Rm 217, Wd 5C
Neurology Conference	1430–1630	Wd 133 Office
Ophthalmology Clinic, Dr. Moss, Civ. Cons.	1500	Eye Clinic

TUESDAYS—JULY 3-10-17-24-31

Staff Conference, General Rounds, Pediatrics	0830	T-5, T-6
Gynecology Clinic	0900	Wd 130
Ward Rounds & Cl., Urology, Dr. Herbst, Civ. Cons.	1100–1200	Wd 6A
Lecture in Gynecology, Dr. Holden, Civ. Cons.	1130–1230	Wd 130
Fundus Clinic	1130	Wd 3B Off
Urology Outpatient Clinic	1300	Wd 6A

Prenatal Clinic	1300	Wd 130
Plastic Surgery Clinic	1300–1500	Wd 6D
X-ray Conference, Orthopedic Staff	1300	Orth Conf Rm 5C
Ophthalmology Clinic, Dr. Downey, Civ. Cons.	1400	Eye Cl
Psychiatry Consultations, Dr. Noble, Civ. Cons.	1400–1630	Wd 137
Urology X-ray Conference	1500	Wd 6A

WEDNESDAYS—JULY 4-11-18-25

Obstetrics & Gynecology Staff Conference	0830–0930	T-4
Staff Conference & General Rounds, Pediatrics	0830	T-5, T-6
Childrens Plaster Clinic	0900	Plaster Rm
Bronchoscopic Clinic, ENT Staff	1000–1100	ENT Clinic
Gynecology Clinic	1000–1100	Wd 130
Lecture & Rounds, Pediatrics, Dr. Anderson, Civ. Cons.	1030	T-5
Motility Clinic, Eye Staff	1100	Eye Clinic
Medical Conference	1045–1200	Rm 325 Bldg 1
Lecture in Gynecology, Dr. Mundell, Civ. Cons.	1130–1230	Wd 130
Neurology Conference	1300	Wd 133 Office
Prenatal Clinic	1300–1600	Wd 130 OBS Cl
Orthopedic X-ray Conference, Orth. Staff	1300	Orth Conf Rm 5C
Lecture on Radioisotopes in Medicine, Dr. Berlin, Civilian Consultant	1300	Rm 325, Bldg 1
Orthopedic Outpatient Dependent Cl., Dr. Peacock, Dr. Egan	1330	Orth Cl Wd 130
Diagnostic & Therapeutic X-ray Conf., Dr. Belair or Dr. Caulk, Civ. Cons.	1500–1630	Rm 325 Bldg 1
Neuropsychiatry-Occupational Joint Conference	1530	Wd 131
Neuropsychiatric Journal Club	1530	Wd 131
Homograft Conference	1930	Wd 107

THURSDAYS—JULY 5-12-19-26

Staff Conference & General Rounds, Pediatrics	0830	T-5, T-6
Gynecology Clinic	0900–1200	Wd 130
NP Staff Conference	1100–1200	Wd 131, Classrm B
Operative Obstetrics	1100–1200	T-4
Tumor Board, Chief of Surgery	1300–1400	Rm 325, Bldg 1
Urology Outpatient Clinic	1300	Wd 6A
Orthopedic X-ray Conference	1300	Orth Conf Rm 5C

Orthopedic Active Duty Outpatient Cl., Dr. Foley	1330	Chief Orth Office
Prenatal Clinic	1400–1600	Wd 130
Dermatology Cl., Dr. Barksdale, Civ. Cons.	1400–1630	Wd 5B
Anesthesia Staff Conf., Drs. Brabill, Leahy, Civs.	1400	Rm 325 Bldg 1
Psychiatric Conscultations, Dr. Lebensohn, Dr. Noble, Civ. Cons.	1430–1630	Wd 136 Office
Child Guidance Conference, Pediatric & NP Service	1500	T-6
Urology X-ray Conference	1500	Wd 6A

FRIDAYS—JULY 6-13-20-27

Staff Conference & General Rounds, Pediatrics	0830	T-5, T-6
Gynecology Clinic	0900–1200	Wd 130
Childrens Orth. Outpatient Cl., Drs. Doolittle, Shechter, Peacock	0900	Wd 130, Orth Cl
Cardiology Conference & Ward Rounds, Dr. Harvey, Civs.	1000–1200	Wd 3B
Pathology Journal Club	1000–1100	Rm 352, Bldg 1
X-ray Conference, Orthopedic Staff	1300	Orth Conf Rm
Obstetrics & Gynecology X-ray Conference	1300	X-ray Dept.
Pediatric Journal Club & X-ray Conference	1300	Rm 325 Bldg 1
Grand Rounds, Orthopedic Staff	1400	Orth. Service
Prenatal Clinic	1400–1600	Wd 130 OBS Cl
Neurology Conference	1430	Wd 133 Office
Urology X-ray Conference	1400	Wd 6A
Basic Sciences Otolaryngology & Ophthalmology	1600	ENT Office

SATURDAYS—JULY 7-14-21-28

Grand Rounds, EENT Staff	0830	Wd 4B T-13
General Rounds, Chief of Surgery	0830–1130	
Grand Rounds, Pediatrics	0830–1100	T-6
Grand Rounds, OBS-GYN	0830–1000	
General Rounds, Urology Staff	0900	
Orthopedic Problem Cl., & X-ray Conf., Dr. Tobin or Dr. Berg., Civ. Cons. (alternating)	0900	Orth Conf Rm 5C
OBS-GYN Seminar	1030–1130	Wd 130
OBS-GYN Statistical Survey & Departmental Clinical Meeting	1030–1130	
Otolaryngology Clinic, Dr. Jenkins, Civ. Cons.	To be announced	ENT Clinic
Pediatric Cardiology Conference	1100–1200	Rm 325 Bldg 1

Assigned

The assigned staff is made up of medical officers holding positions of chief or assistant chief of services. In most cases these physicians are diplomates of their respective specialty boards. These medical officers are responsible for the instruction and training of the residents and interns on their service—and are carefully selected for their previously demonstrated clinical and teaching abilities.

Attending

Attending or consultant staff is made up of civilian physicians and surgeons most of whom are on the faculties of the Georgetown University and George Washington University Schools of Medicine. These physicians are responsible for a definite part of the teaching programs and play an important role in conducting many of the general staff conferences such as the tumor board, cardiovascular conference, gastro-intestinal conference, and hematology conference. Some of these consultants also actively participate in the operating rooms and wards of the hospital.

House staff

The house staff, consisting of the residents and interns, is very important in the smooth functioning of the hospital. The younger doctors in training are encouraged to assume responsibilities commensurate with their capacities and aptitude. Assistance and consultation are always available. The resident is directly responsible for examining each patient on his service and for planning appropriate orders for clinical evaluation and treatment. Special classes in the basic sciences are held regularly for all residents in order to elaborate upon fundamental material related to their chosen specialties. Contrary to popular opinion, the military resident has no more paper work or "red tape" than his civilian counterpart.

During his training period, each resident is encouraged to participate in some form of investigative or re-

The Navy's Tissue Bank program drew attention of many visiting physicians at a recent Medical Center symposium.

search work concerned with his own specialty. Such reports may be submitted for publication.

Properly performed and adequately presented autopsies constitute an essential part of the medical training program. Residents and interns are required to attend autopsies unless excused for just cause. The percentage of autopsies in relation to total deaths was 83% in 1955, a figure greater than that of most hospitals.

Conferences

The schedule of conferences and clinics held at the U. S. Naval Hospital during a typical month is shown in the table. In addition to these, the resident staff is encouraged to attend as many meetings and conferences of the National Institutes of Health, Armed Forces Institute of Pathology, regional medical schools, Washington area teaching hospitals, medical societies, and United States Government Agencies (e.g., National Research Council) as time away from actual patient-care will permit.

The Navy recognizes that the clinical work and training schedules of all residents and interns are very heavy—but operates on the basis that a happy medium can be struck. A time allocation can be maintained by the resident that results in the ultimate satisfaction: knowing that the job has been "Well Done."

"Unusual heart sounds . . . Three short beats . . . Three longs and then three shorts again!"

SPECIAL REPORT

Navy Medicine: Residency Training and *Career Opportunities*

Here is a comprehensive picture of residencies and other medical career programs currently being sponsored by the United States Navy.

Residency Training

This year represents the tenth anniversary of the Navy's formalized and augmented residency training programs. Today, residency training is sponsored by the Navy in nine U. S. Naval hospitals and many additional civilian medical schools and centers throughout the United States. Residency programs offered by the Navy embrace every specialty of medicine and all are approved by the various specialty boards and by the Council on Medical Education and Hospitals of the American Medical Association.

Progress report

Since 1946, approximately 2500 physicians have received residency training under naval auspices, as Regular and as Reserve medical officers.

As of July, 1956, there were 542 medical officers on active duty with the Navy who are certified by American specialty boards. Of this number, 384 are in the Regulars and 158 in the Reserves, representing 21 clinical specialties of medicine.

Currently, there are 325 Reserve and Regular medical officers engaged in full-time, formal residency training under the Navy's programs, about 10% of these being assigned to various civilian institutions.

Graduate education

The primary purpose of the entire graduate education program of the Navy's Medical Department has always been threefold . . . namely, "to lend realistic and efficient medical support to the combatant forces of the Navy and Marine Corps; secondly, to strive constantly to make possible the professional advancement and improvement of all Medical Department personnel; and, thirdly, to improve the quality and promptness of patient care in war and peace."

Civilian consultants

Since 1946, when the Navy's residency training programs were expanded, the services of large numbers of eminently qualified civilian consultants from the leading civilian medical institutions of the United States have been utilized actively to

conduct and maintain these programs in accordance with the highest standards and traditions of American medicine. For the current fiscal year there are 485 such consultants, each appointed for his proven contributions to medicine and the teaching of medicine . . . covering all the specialties in which graduate training is offered. The results of the Navy's civilian consultants' contributions continue to be of extreme importance in the professional development of medical officers, in the maintenance of an atmosphere characteristic of teaching-type hospitals, and in the ever-improving high standards of patient-care. Additional features of the joint action of well-qualified chiefs of services, chosen from

OBLIGATED SERVICE

Participants in residency training programs are limited to Regular and Reserve officers who, in their written requests for such residency, state that they volunteer and agree to serve for periods of active duty in accordance with one of the following applicable options:

MILITARY RESIDENCY IN A MILITARY HOSPITAL	OBLIGATED SERVICE FOLLOWING RESIDENCY	TOTAL
One year of residency	1 yr.	2 yrs.
Two years of residency	2 yrs.	4 yrs.
Three years of residency	3 yrs.	6 yrs.

FOR COURSES OR MILITARY RESIDENCY IN A CIVILIAN SCHOOL OR HOSPITAL	OBLIGATED SERVICE FOLLOWING RESIDENCY	TOTAL
Less than six months of training or residency	Two months for each month of formal training	
Six months to one year of training or residency	2 yrs.	3 yrs.
Two years of residency	3 yrs.	5 yrs.
Three years of residency	4 yrs.	7 yrs.

Resignations will be accepted from Regular Medical officers who have no obligated service for training received under naval sponsorship and who have served two years or more on active duty. Requests for voluntary retirement will be accepted from all medical officers with 20 or more years of active service.

Residency Training

among carefully selected naval medical officers and civilian consultants, are the coordination and integration of naval hospital staff performance and the extensively employed professional consultative liaison.

All programs are carefully graded and integrated to assure that no vital area of residency training is left uncovered, whether all training is received in naval institutions or received jointly in naval and civilian areas. All of the 25 U. S. Naval hospitals in the continental United States and 1 foreign U. S. Naval hospital are fully accredited by the Joint Commission on Accreditation of Hospitals.

Training requests

Medical officers eligible for assignment to duty as resident physicians are Regular Navy officers and those Reserve medical officers who have completed their active service obligations under the Universal Mili-

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Board-approved residency training is offered in 18 specialties, mostly in the U. S. Naval hospitals at Chelsea, Massachusetts; St. Albans, New York; Philadelphia, Pennsylvania; National Naval Medical Center, Bethesda, Maryland; Portsmouth, Virginia; Great Lakes, Illinois; Oakland, California; Corona, California; and San Diego, California.

In those few fields where the Navy does not have board-approved programs in naval hospitals, residency training for medical officers is sponsored in leading civilian institutions. Examples are plastic surgery, neurosurgery and public health.

ALLERGY
1 year of residency
1 residency
San Diego

ANESTHESIOLOGY
2 years of residency
20 residencies
Chelsea, St. Albans, Bethesda and Oakland

GENERAL PRACTICE
2 years of residency
10 residencies
Chelsea, Portsmouth and San Diego

INTERNAL MEDICINE
3 years of residency
53 residencies
Chelsea, St. Albans, Philadelphia, Bethesda, Portsmouth, Great Lakes, Oakland and San Diego

NEUROLOGY
2 years of residency
4 residencies
Bethesda and Philadelphia (3rd year given at a civilian institution)

SURGERY
4 years of residency
66 residencies
Chelsea, St. Albans, Philadelphia, Bethesda, Portsmouth, Great Lakes, Oakland and San Diego

OTOLARYNGOLOGY
3 years of residency
13 residencies
Philadelphia, Bethesda, Oakland and San Diego

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tary Training and Service Act, as amended. Requests for residency training duty are acted upon by an advisory board on professional training matters. This board, under the Navy's Bureau of Medicine and Surgery, makes recommendations in accordance with the merits of each case, taking into consideration the professional experience, background, and aptitude of the candidate and the needs of the service in the particular specialty in which training is desired.

At present recommendations are made upon the following priority.

(1) Regular service officers completing two or more years of commissioned service, exclusive of internship.
(2) Regular service officers with one to two years of commissioned service, exclusive of internship.
(3) Regular service officers with less than one year of commissioned service, exclusive of internship.
(4) Armed Forces interns contingent upon appointment in Regular service in accordance with directives.

CARDIOVASCULAR DISEASE
1 year of residency
2 residencies
Bethesda

DERMATOLOGY and SYPHILOLOGY
3 years of residency
9 residencies
Philadelphia and San Diego

OPHTHALMOLOGY
3 years of residency
13 residencies
St. Albans, Philadelphia, Bethesda, Oakland and San Diego

PEDIATRICS
2 years of residency
16 residencies
Chelsea, Philadelphia, Bethesda and Oakland

OBSTETRICS—GYNECOLOGY
3 years of residency
52 residencies
Chelsea, St. Albans, Philadelphia, Bethesda, Portsmouth, Great Lakes, Oakland, Corona and San Diego

ORTHOPEDIC SURGERY
4 years of residency
20 residencies
Chelsea, Philadelphia, Bethesda, Portsmouth and Oakland

RADIOLOGY
3 years of residency
24 residencies
Chelsea, St. Albans, Philadelphia, Bethesda, Oakland and San Diego

PATHOLOGY
4 years of residency
24 residencies
St. Albans, Philadelphia, Bethesda, Oakland and San Diego

PSYCHIATRY
3 years of residency
28 residencies
Philadelphia, Bethesda and Oakland

THORACIC SURGERY
2 years of residency
4 residencies
St. Albans and San Diego

UROLOGY
4 years of residency
16 residencies
St. Albans, Philadelphia, Bethesda, Oakland and San Diego

(5) Civilian interns contingent upon appointment in the Regular service in accordance with current directives.

(6) Reserve officers on active duty or those who volunteer to return to active duty and who have completed the obligations for active duty imposed by the Universal Military Training and Service Act, as amended.

Career Incentive Bill

The Medical and Dental Officers' Career Incentive Bill went into effect on May 1, 1956. It grants constructive service credit towards longevity pay and promotion for the four years physicians and dentists spend in medical school and dental school respectively, and for one year spent by physicians in internship.

The Bill also provides additional incentive pay of $100 a month during the first two years of active service exclusive of internship. This is increased to $150 a month during the 3rd to 6th years inclusive, and $200 a month during the 7th to 10th years inclusive, and $250 a month of those who have completed 10 or more years of active service.

The following pay scales are now utilized for medical and dental officers of the Navy.

	Lt. (jg)*	Lt.*	Lt. Cdr.*
Base pay	$259.36	$326.04	$400.14
Subsistence allowance	47.88	47.88	47.88
Quarters allowance	94.20	102.60	119.70
Incentive pay	100.00**	100.00**	100.00**
Total monthly	501.44	576.52	667.72
Total annually	6,017.28	6,918.24	8,012.64

*Based on no previous service, but with dependents (e.g. married).

**Increased as above—after 2, 6 & 10 years of active military service.

Career Opportunities

PREVENTIVE MEDICINE AND PUBLIC HEALTH

Yellow fever, smallpox, typhoid fever, diphtheria, plague, cholera, and typhus fever have all been traditional scourges of ships, decimating crews and jeopardizing the success of naval ventures. That they are scourges no longer is a measure of the status of preventive medicine as applied to naval forces.

Vital manpower

Remaining to challenge those physicians and allied scientists who see the great advantage of treatment and prevention of diseases in populations in contrast to individuals, are streptococcal disease, influenza, bacillary dysentery, enteric infections of undetermined etiology, infectious hepatitis, and the enforced early retirement of persons with mental disorders or heart and kidney disease. In this challenge exists the potentiality for prolonging the life and economic usefulness of masses of people at a time when the nation's manpower status is so important.

Preventive medicine

In the Navy this challenge faces all Medical Department personnel and, in particular, the personnel with preventive medicine assignments on shore stations at home and abroad, and on our ships and aircraft. Preventive medicine is practiced by all categories of Medical Department personnel. Medical officers of all echelons, with accomplishments in bacteriology, entomology, parasitology, and other public health fields, work closely with Medical Service Corps and Hospital Corps officers qualified to assist them in sanitation inspections and supervision of sanitation practices. A legion of intelligent, energetic, and well-informed enlisted technicians assist in carrying out inspections, collecting specimens, performing supportive laboratory tests, and recording data.

Preventive medicine reaches into all aspects of naval life. It helps to provide healthful environments for

the Navy's fighting forces and assure suitable living and working conditions in ships, barracks, and food preparation and storage centers. It works to minimize the effects of epidemics upon all Navy and Marine Corps personnel and their dependents wherever they may be.

Occupational health

Opportunities exist for duty and training in the occupational health field of preventive medicine. An extensive occupational health program is carried on for military and civilian personnel through industrial medical officers and industrial hygiene engineers.

The program is aimed at promoting and maintaining the mental and physical health of personnel employed in industrial activities ashore and afloat.

Indoctrination is available to medical officers in the many related areas of preventive medicine such as tropical medicine, epidemiology, biostatistics, animal reservoirs, arthropod vectors of disease, and the environmental factors which influence disease transmission.

Following such indoctrination, formal training leading to a Master's or Doctor's degree is available in recognized schools of public health noted for the excellence of their training programs.

Upon completion of such formal training, medical officers are assigned to work in their special fields of interest for the practice of their specialty within the Navy, insofar as service conditions permit.

The specialty of preventive medicine and public health offers a satisfying career in the Navy. Medical officers whose careers follow aviation, submarine, "atomic" or clinical medicine also have ample opportunity to stand up to the challenge of preventive medicine as a collateral and very important aspect of their duties.

A residency training program in public health is currently being organized by the Navy, and a request has been made to the American Board of Preventive Medicine to review and inspect this program for accreditation purposes.

AVIATION MEDICINE . . . RESIDENCY AND OTHER TRAINING

Aviation, which includes anti-submarine warfare, tactical support of ground forces or amphibious landings, airlift of supplies and personnel, and the evacuation of casualties, is a major and integral part of the Navy's offensive and defensive power. The multiplicity of these tasks and missions along with the tremendous increases in speed and altitude, and extensions in the length

and duration of flights, requires extensive research and the application of modern medical knowledge to select and assure competent and healthy personnel.

Varied choice

As a result, a career in aviation medicine offers a varied and interesting choice for medical officers. Those chosen are given a six-month course which includes special training in the fields particularly important to aviation medicine such as ophthalmology, otolaryngology, neuropsychiatry, and physiology. The course also includes training and experience in the special problems posed by the stresses present in the environment of the aviator, by use of such facilities as low pressure chambers, ejection seat training device, and the human centrifuge.

The course is divided into two phases, the first four months being devoted to didactic and clinical studies of both normal and abnormal human behavior and reaction as related to flight. The second phase of two months is composed of flight indoctrination; the student flight surgeon is instructed in all phases of flight. He is taught the rudiments of flying, up to and including the check for solo flight. However, no solo flight is permitted.

Thereafter, he experiences all types of training and operational flights such as instrument instruction, gunnery and bombing runs, acrobatics, carrier landings and takeoffs, as well as flights with land and sea patrol and helicopter units.

In addition to opportunities for training in the specialties closely related to aviation medicine or in research, certain interested flight surgeons may receive training to qualify as naval aviators.

Survivor Benefits

The Servicemen's and Veterans' Survivor Benefits Act has been passed by the House and Senate, and will be law by the time this article is published if the President approves and signs the Act. This Act provides:

- Six months of basic and incentive pay as a death gratuity to the surviving widow of any medical or dental officer who dies while on active duty.
- Increase in widows' pensions granted by the Veterans' Administration. This provides for a pension of $112 per month plus 12% per month of the basic pay that was being received by the husband at the time he died while on active duty.
- Terminates the gratuitous basis for Social Security and substitutes a participating and contributory basis to place medical officers permanently under Social Security. This program requires a few dollars per month from each medical officer and stands to offer considerable benefits to certain retired personnel or their widows.

The net provisions of this new Act amount to an annuity program for the widows of deceased active duty military personnel, at very negligible cost compared with an equally protective program which could be set up in civilian life.

Residency program

A two year residency training program in aviation medicine is conducted at the U. S. Naval School of Aviation Medicine, Pensacola, Florida, which is approved by the American Board of Preventive Medicine and by the Council on Medical Education and Hospitals of the American Medical Association. Subsequent formal training and supervised practice or residency experience under auspices of the Navy meet the requirements of the American Board of Preventive Medicine which permits these residents to undergo examination by the Board for certification in aviation medicine.

RESEARCH OPPORTUNITIES —CLINICAL AND LABORATORY

The Navy has traditionally been interested in furthering research and development both by the operation of numerous laboratories and by contract research where desirable. It fully realizes that progress can be obtained only in the presence of an active research and development program.

The Bureau of Medicine and Surgery has been a leader in recognizing the need for a strong program in research and development, and has accordingly provided for both clinical and laboratory research. The major part of the research effort goes into the important problem of relating the man effectively and safely to the operational situations of the Navy. However, strong clinical and basic research programs are also pursued.

Research laboratories

One of the most important institutions of its kind in the world is the Naval Medical Research Institute in Bethesda, Maryland, which has ample space, high grade equipment and excellent personnel. This guarantees investigations being conducted with precision and thoroughness on many of the medical aspects of the naval service. In addition, there are fifteen other laboratories under the management or technical control of the Bureau of Medicine and Surgery, a majority of which are located in the United States while others are located in areas such as Cairo, Egypt, and Taipei, Taiwan, Formosa.

It is an established policy of the Bureau of Medicine and Surgery that medical officers of the Navy may embark on a career in research.

While it is true that the requirements of the Naval service include periodic change of station, this does not interfere in any important way with continuous research. The establishment of research laboratories

overseas allows the Navy to rotate medical officers without disrupting the continuity of their projects.

Planned medical research in the Navy is only a little more than thirteen years old, but there is already a cadre of distinguished investigators in naval uniform who have made contributions of great importance. Associated with them in the various laboratories are civilian scientists distinguished in their own right, who bring to naval medical research an important background of experience and a spirit of progressive contribution to medical knowledge.

Clinical research is strongly encouraged by the Bureau of Medicine and Surgery. The facilities of the naval hospitals are well adapted to this purpose, and naval clinicians have made and continue to make important contributions to diagnosis, prevention, and treatment. Individual clinicians undertake special projects in their fields of interest, and in certain hospitals clinical research centers have been established for long range programs of investigation.

Training of younger officers in research is provided in the naval laboratories as well as in the form of training courses, residencies and fellowships in universities and other civilian establishments.

ATOMIC MEDICINE

The new, rapidly expanding field of atomic medicine includes not only staff duties in atomic defense, but also the clinical use of radioisotopes and research in radiobiology. For the past several years, billets have also been maintained at nuclear reactor sites, both on shore and afloat. At the present time there are six naval hospitals designated as Clinical Radioisotope Centers. In addition, a considerable amount of research in radiobiology is being carried on at the Naval Medical Research Institute of the National Naval Medical Center, Bethesda, Maryland, and at the Naval Radiological Defense Laboratory, San Francisco, California, . . . as well as at various other naval medical research units both within and without the continental limits of the United States.

Training courses

Indoctrination in atomic defense is carried out in several ways. The two principal methods are by means of a two-week course at the National Naval Medical Center, Bethesda, Maryland, and in short orientation courses in special weapons at San Diego, California, and at Norfolk, Virginia. There is also a Training

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Course of five weeks in Atomic, Biological and Chemical Warfare Defense at the Naval Schools Command, Treasure Island, San Francisco, California, . . . the Naval Unit, Chemical Corps Training Command, Chemical Corps Schools, Fort McClelland, Alabama, . . . and the Damage Control Training Center, Philadelphia, Pennsylvania.

For those interested in research and the medical aspects of nuclear power, extensive college-level courses are available and consist of six months training . . . followed by two months on-the-job training at the Oak Ridge National Laboratory, Oak Ridge, Tennessee, and five weeks at Fort McClelland, Alabama.

Medical training for nuclear reactors will become increasingly important as the Navy expands its nuclear propulsion program for ships and as developments occur in utilization of nuclear reactors.

SUBMARINE MEDICINE

Submarine medicine, one of the important military specialties, embraces not only the medical aspects of underwater operations of the submarine and its personnel, but also the medical aspects of deep-sea and salvage diving, underwater swimming operations, and submarine escape procedures.

As technical advances in construction of submarines and diving equipment are made, new medical problems are created. Medical research must therefore parallel these advancements.

New problems

At the turn of mid-century many new physiological and psychological problems were introduced when one of our Navy's submarines broke a world record for continuous submergence at snorkel depth—a distance of 5,200 miles in 505 hours. The atomic submarines now stand to shatter all previous records for sustained, totally submerged operations, as well as for speed. As man further isolates himself from nature's normal environment, he must face more numerous and important physiological and psychological stresses. The solution of these stresses is a constant medical challenge.

The Medical Research Laboratory at New London, Conn., is conducting research studies in an effort to formulate a successful personnel assessment program. Other research studies contributing to increased personnel efficiency are those habitability factors which include improved berthing, messing and bathing facilities, special clothing, heating, air conditioning, ventilation, noxious gases, and odor control.

Research in deep-sea diving in-

cludes the calculation and testing of decompression tables employing air, oxygen, helium-oxygen or nitrogen-oxygen gas mixtures, physiological studies concerning respiration, circulation, body composition, the toxicity of various gases under increased pressure, and the evolution, prevention and treatment of accidents resulting from an underwater sojourn.

Underwater swimming

Many urgent medical problems encountered by the underwater swimmer demand solution by the submarine medical officer. The problems encountered in this type of operation differ from those of deep-sea diving in that the diver operates without surface attachments such as an air hose and telephone. The design and fabrication of swim suits which should protect him from cold, wet, and underwater blast present many problems which challenge solution.

In order to train medical officers in this specialized field of medicine, a six-month course of instruction is offered at the Submarine School, U. S. Naval Submarine Base, New London, Connecticut. Two of these six months are spent at the Deep Sea Diving School, Naval Gun Factory, Washington, D. C., for additional training in the medical aspects of diving. After graduation, these medical officers are usually assigned to the various submarine squadrons located at Pearl Harbor, San Diego, New London, Norfolk, or Key West, Florida. A year after graduation, they are eligible for their medical dolphins. Medical officers assigned to tenders, shore-based squadrons or to a submarine base, find ample facilities are available for the pursuit of clinical practice.

The basic training received in the field of submarine medicine offers the medical officer an excellent background for continued training and qualification in the various fields of medical research and industrial or occupational medicine.

Dependents' Care

The Dependents' Care Bill will become effective on December 7, 1956. This legislation assures that adequate medical care, including hospitalization, will be available to legal dependents of all active military service personnel, either at military or civilian institutions at a modest cost — provided certain guideline requirements are met as to the circumstances under which civilian medical or hospital services would be or would not be authorized. This new law will be particularly helpful to the dependents of active duty military personnel at sites remote from military medical installations.

AMPHIBIOUS MEDICINE

Recognized as a military medical specialty within the Navy, amphibious and Marine Corps field medicine offers a challenging and satisfying undertaking. Training and preparation for the best possible medical support of units in amphibious assault present many problems. Among these are routine medical care of troops in the field and of men aboard vessels of the amphibious fleet, medical supply, medical planning, training exercises, casualty sorting and evacuation, research and development of field medical equipment and field sanitation and preventive medicine.

It is the aim of the Navy Medical Corps to deliver and apply modern skills as effectively as possible to those engaged in a special kind of maneuver requiring a high degree of timing and coordination. To do so requires continual study, planning and research, in view of new experiences and new developments in medical science and in military methods.

Applications of general surgery, orthopedics, internal medicine, sanitation, preventive medicine and psychiatry are indispensable, . . . but those who practice them under special conditions must acquire a thorough knowledge of field methods currently in use and properly season them with imagination, versatility, and resourcefulness. Sound grounding in the principles of medical tactics and medical policies as they bear on the support of amphibious and field units is essential if the aims of the Medical Corps and of the military are to be served best.

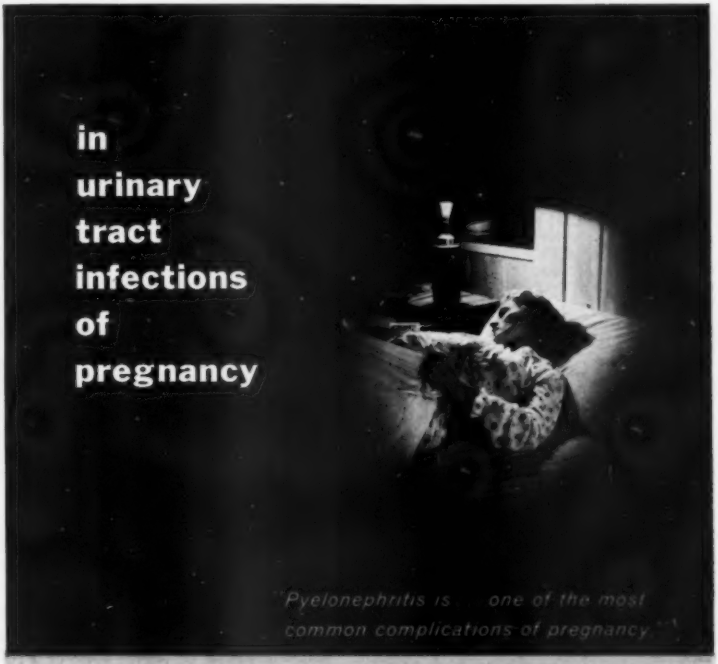
Field schools

Officers in this specialty are first sent to one of two field medical schools, located at Camp Lejeune, North Carolina, or Camp Pendleton, California, for a period of four weeks. Here they are taught the fundamentals of amphibious and Marine Corps field medicine. They are then integrated into various units for the practical aspects of training.

An advanced comprehensive course is given at the Marine Corps Schools, Quantico, Virginia, for candidates who are selected. Instructorships are available at these same schools for more experienced officers.

Special courses in amphibious medicine are also given at Little Creek, Virginia, and at San Diego, California.

The Naval Medical Field Research Laboratory at Camp Lejeune, North Carolina, is a well-equipped institution offering opportunities for research in numerous scientific specialties. To those whose interests lie in this field and who come to find satisfaction in close association with



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References: 1. Koss, E. H.: Am. J. Med. 18:744, 1955. 2. Diggs, E. S., Provost, E. C., and Valderas, J. G.: Am. J. Obst. 71:399, 1956.

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the Marine Corps, there are numerous dispensaries and naval hospitals located at Marine bases where tours of duty in clinical medicine may be spent.

Amphibious and Marine Corps field medicine offers an interesting and absorbing study, and rich rewards both in the satisfaction of worthwhile accomplishment and in the pride and pleasure of association and friendship with the officers and men of the Marine Corps.

POSTGRADUATE COURSES

Medical officers may request short courses, from a few days to a few months in duration, to augment their professional knowledge and experience. Such courses are usually in the nature of intensive refresher courses in particular phases of medicine or sub-specialty or in preparation for examination by a specialty board (after having completed the formal period of residency training required). Attendance at courses given by the American colleges and American specialty boards at their annual meetings is likewise included in this category.

Short courses also prove of particular value to the older medical officer, enabling him to keep abreast of recent developments in his particular field of medicine.

In general, attendance at the above short courses, seminars, conferences, etc,, is restricted to Regular service officers and to those Reserve medical officers who are on extended voluntary active duty.

A development in short course training, provided on an agency basis by those Government agencies operating hospitals, is the intensive three weeks seminar in hospital adminis-

Information

Any civilian physician, with or without previous active duty or affiliation with any of the military services, or any medical officer—active or inactive—may obtain additional information by visiting his nearest office of Naval Officer Procurement or by writing directly to the Chief of the Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C.

The time normally required for the processing of an application for a commission in the Regulars or the Reserves of the Navy is about four to six months. Applicants for residency training should gauge their advanced planning accordingly. **The reason for the lengthy waiting period is the fact that commissioned officers of all the Armed Forces will likely have accesss, at some time or another, to classified matter . . . and, thus, must have a properly conducted security clearance.**

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tration. The inter-agency seminars in which the Army, Navy, Air Force, Public Health Service, Veterans Administration, and Indian Affairs participate, are conducted biannually under the sponsorship of one of the above agencies on a rotational basis. These seminars present outstanding authorities in various phases of hospital administration and prove most valuable to those medical officers who have had some experience in administration and who are in the age bracket to be eligible for more responsible administrative assignments.

The designation "long courses" is applied to those graduate and postgraduate courses of six months or more in duration and may deal with any of the specialties represented by an American specialty board, the military specialties of aviation and submarine medicine, radioisotopes, public health, neuro-psychiatry, radiobiology, and other areas of the related sciences. For both long and short courses, as with residencies, written application is made to: Chief, Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C.

No statement in this report should be construed as a statement of policy or representing official opinion of the U. S. Navy or the Bureau of Medicine and Surgery.

Alien Interns and Residents in the United States

James E. McCormack of the Presbyterian Hospital, New York and Arthur Feraru of the Institute of International Education [Journal of the American Medical Association, 161:322(1956)] submit a report compiled from questionnaires sent to 1,329 "approved" hospitals. With the exception of Idaho, Nevada and Wyoming where there are no hospitals with approved internships and residencies, and New Mexico, forty-four states, the District of Columbia, the Canal Zone and Hawaii reported on the number of alien house officers on their staffs in 1955-1956; the total is 6,033. Of this number, 4,174 or 69.2 per cent are residents.

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Letter To a Resident

Dr. Robinson, a resident in internal medicine, is in regular correspondence with a close personal friend and practicing physician. When he comes up with a big question, Dr. Robinson gets off a note to his physician friend. The following is a reply to a recent question. The answer should prove interesting to all residents.

Dear Rob:

You asked me in your last note to give you my opinion on what I think your main responsibility is other than your patients, of course. That's a dilly! I never thought of any physician as having a main responsibility. We all have a number of related responsibilities, any one of which may be considered the main one in a particular circumstance.

Not that it isn't a good question. But I have a feeling that my answer is going to cover a lot of territory which you may think is beside the point.

One thing I like is that you don't limit your curiosity and interest to strictly clinical topics. That's good.

In my day, as you know, there was no formal residency training to speak of, with the notable exception of a few teaching centers such as Hopkins.

In fact, a full-time specialist in medicine or surgery was just about as rare as a blacksmith who confined his work to putting horseshoes on three-legged animals.

Most of us didn't wonder too much about what our primary responsibilities were. We just hoped that for the first month in our general practice we wouldn't show how dumb we were. We prayed that we wouldn't goof on our first operation.

Of course, none of us ever did mess up on the first day. We had a lot more know-how than we

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imagined. And besides, God made most of our patients pretty tough, basically healthy, remarkably responsive to our medieval ministrations.

While we didn't have the amazing drugs now commonplace today, we had the time and a desire to cure regardless of what might be involved in the fee or the personal sacrifice.

Capable

And despite what you may hear to the contrary, any thinking physician of my era—and we still practice medicine—considers today's crop of newcomers as better-trained by far than we were. You are capable of so much more. You will meet the "hopeless" case far less frequently than we did among the young patients. You will never become familiar with the odor of Diptheria. Nor will Pneumonia be a diagnosis you will be required to give with a tight, dry feeling in your throat and a sick, bitter hatred in your heart.

Public acceptance

In one respect you, Rob, and your colleagues are experiencing a golden era of medicine and surgery. You are dealing with a public which has accepted the advances of medicine, surgery, and pharmacy—and at a moment's notice will pour millions into research to lick any problem which deals with the illnesses of mankind.

Now, where does responsibility enter the picture? I think the first thing for you to remember is that it is your dedication to your profession which is the single most important strength you can possess. You must fight to avoid complacency. You must set your mind against the idea that any physician is capable of doing what you do.

Preventive medicine

You must hold on with all your might to the basics of medicine. A thorough and complete physical is still your most important tool. A painstaking, detailed workup is still the best method for obtaining an accurate diagnosis and instituting proper therapy. It is also the basis for the new age of preventive medicine.

That's your horizon: the prevention of disease as well as the cure. If that doesn't provide you with responsibilities, I don't know what could.

Opportunity

Want another one? This is a little closer to your present status, I think. You and your fellow residents are devoting "extra" years to hospital work. You are in a sense exchanging these years of tough hours with precious little pay or play for a more thorough training in one of the disciplines of medicine.

From the viewpoint of an old gaffer, what you are now doing is in the nature of a grand opportunity. Your responsibility? *Don't waste your opportunity.*

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Remember, your drug armamentarium is formidable in quantity and quality. It's growing more so every day. Your teachers are more skilled, techniques improved, facilities expanded. Yet, are you learning all you can? Are you pushing yourself to the limit of your abilities? This is the time to knock yourself out.

Some residents are simply drifting. Are you?

Believe me, I mean this as no indictment of the caliber of residents, but only as a sort of indication of a blind spot in the would-be-specialist's make-up. You see, Rob, a resident has many responsibilities; to his patients, his hospital, to the attending physicians, to his interns, students, nurses, and of course, to his family. Each means effort and thought.

And often forgotten in the shuffle (and I'm glad you haven't) is the responsibility each resident has to himself.

Sacrifices

Look at it this way. A residency is expensive. Not just in money but in time, too. The pay is certainly no compensation—nor is it meant to be. But the amount of "learning" you can surround, that's compensation.

You have built some dreams—and postponed your marriage out of economic necessity. (Other residents have rushed into marriage for the same reason.) You have made sacrifices. So the time you are putting into your residency is not-to-be-wasted-time.

Your big job now—as I see it—is to make these sacrifices, this "postponed living" count. Here is responsibility enough for two men.

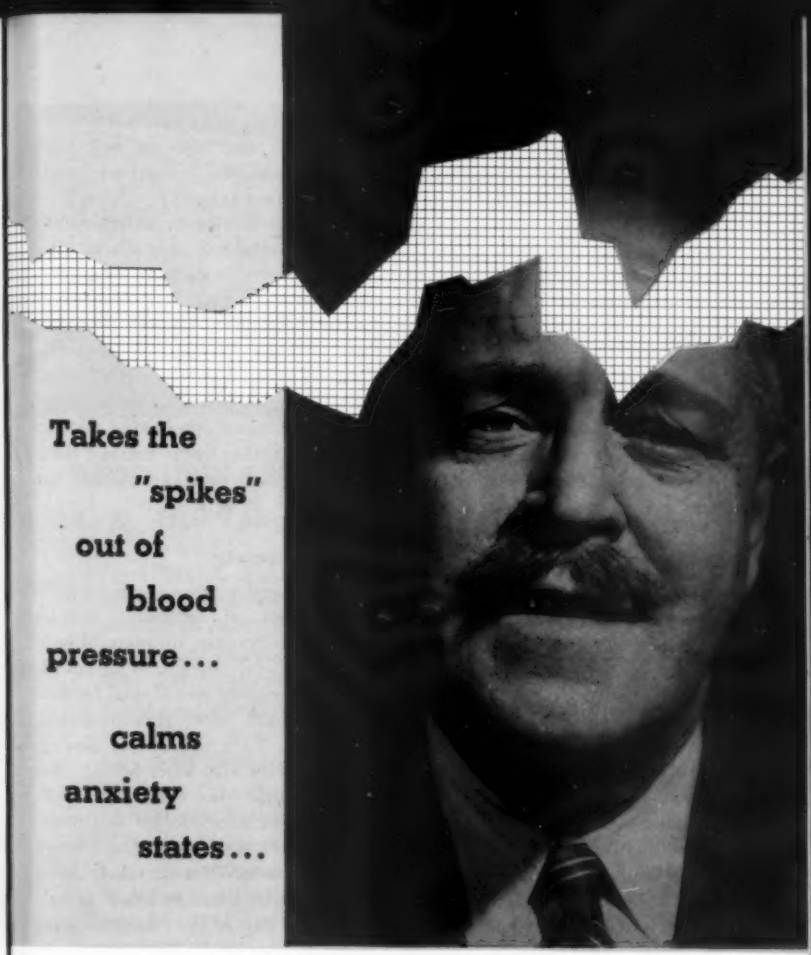
There is another aspect of payment for your time. No residency period can turn out the "complete physician." Bring you along from an interested neophyte to a journeyman specialist, yes. But to ask any program to develop all your interests, talents, capabilities; to broaden your outlook and comprehension—that would be expecting an awful lot from a pretty limited course of education.

However, to imagine you can't use your time to increase your talents, interests and outlook, would be to deny that you are self-motivated.

Extra visits

You have a certain amount of formal training. But these clinics, conferences, lectures and so forth are only part of the plan. Voluntary reading, "extra" visits to the patient, attendance at conferences, special clinics and lectures which don't directly involve your specialty. This is a measure of your interest in medicine and is part of your responsibility to yourself. These are ways to make your residency pay for itself.

Thus, as it is the resident's responsibility to see that his great debt to himself is paid, he should try to squeeze everything possible out of



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the time he is investing. Through his own efforts he can force added training on himself to increase his perception and knowledge.

If you find your hospital is not able to provide you with an opportunity for this added learning, then change hospitals.

However, too often the blame should fall on the resident, his lack of initiative or interest. For this there is no cure but an admission that you are in the wrong field. Forget about your residency. No "complete" specialist can possibly result from half-hearted interest.

Technician

From the contacts you've made among your chiefs and attendings you realize now, more fully than was possible in medical school, that the term specialist has a far broader connotation than the simple description of a man holding a specialty board certificate.

I can tell you some of the things specialist means.

It means training and experience. It also implies mature wisdom, sympathetic understanding, exceptional interest and advanced knowledge in one particular field. If maturity, wisdom and understanding are missing, then the physician is not a specialist. He is at best a rather well-trained technician.

How many interns enter a residency with no other purpose in mind than to be a "specialist." Perhaps, this or that field is open—or, they don't want to enter practice now so they think they may as well take another year. Or, surgery pays well—so why not surgery?

Many of these men unfortunately lack the self-stimulating spark.

True they may do their work competently—but too often, lackadaisically. They are not actually disinterested, but they limit their interest to such a narrow scope that medicine becomes a trade to them. In this way, and probably without knowing it, they cheat not just their patients and their hospitals, but themselves as well.

Part of society

Maturity and wisdom come from diversification of interests; special knowledge becomes meaningful only through its relationship to all knowledge. Certainly you should be well read in fields other than medicine. You must force yourself to stay in close contact with other fields. Not just scientific—but cultural as well. I know you have hobbies and interests outside the hospital, so I won't mention these. But they help keep the specialist a human being, in balance, and part of the society of mankind.

And any physician, specialist or no, must first be human. You are in one measure, a scientist. You deal with theories, experiments and facts. But as a physician your job is human lives. And, Rob, human lives are so often unscientific, defying facts, theories, and experiments.

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Thus, a specialist is not a genius. The true specialist cannot afford the isolation of mind of a genius.

I suppose every physician views himself as damn close to God; especially after successfully completing a particularly intricate and touchy medical or surgical bit of business. If not God himself, at least an attending God or resident God. Don't for a minute delude yourself. When your eyes are wide open your imperfections should become obvious.

God-blessed, you might be. God, you are not.

Since you have the opportunity for a better education than most of your fellows, you have an important responsibility to associate with, understand, sympathize, tolerate and teach.

Don't ever submerge your identity as an individual to your specialty. Also, resist any compromise to your medical ethics or personal principles. Not just token resistance, but a strong, loud fight. (First be sure your principles are actually in danger of being compromised.) That's a responsibility of heavy proportions.

I think all of these things are a part of the resident's responsibility to himself. Capabilities, talent, human understanding and, yes, specialized training. But no hospital program, by itself, can force these things on any resident. And that's why I think, Rob, that these really are *your* responsibilities to yourself. You must face them all by yourself. The harder you try to meet them, the better the specialist you will become.

Your colleague,
E. E. F., M.D.

P.S. I think I must have known more than a thousand physicians personally throughout my 46 years of medical practice. And so I will offer this to you free of charge: The most respected and the happiest doctors I know are those who consistently put devotion and dedication to medicine at the top of their list—and personal rewards at the bottom.

Mind you, these are not the wealthiest doctors I know—although the two are not mutually exclusive—but they are the most contented.

When any doctor comes to think of his profession in terms of income first, and what it accomplishes, second—then he misses the biggest part of doctoring.

So, hang on to your ideals with both hands. Fill your heart with compassion for the suffering. Let your words indicate your understanding. Let your deeds reflect your confidence in yourself as a man, in your skills as a physician. Let no one bend your ethics nor sway your strength of purpose. And, with God's help, you, Doctor, will be a specialist of whom our entire profession can be very, very proud.

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Third of a Series

Investing For The Resident

When making your selection, pick your industry, then the company, then the class of security. Here's how to go about it.

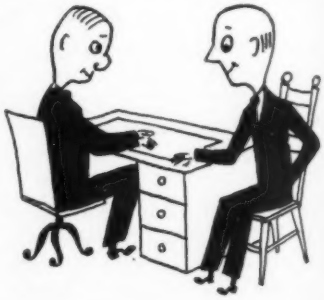
Common stock investment differs in one important respect from the investment you will make in setting up your own practice.

The individual businessman who puts his capital to work in his own business is relying on his own ability as a business manager. As the decisions of each day are made, his judgment is tested. At every step, the success or failure of the business and the profit or loss on his money is under his personal control.

When you invest in common stock, you invest in a business that is managed by someone else; the directors, the president, vice-president, etc., of the corporation. Daily business decisions are not made by the investor.

This is a fundamental difference; but it does not mean that wise investment doesn't call for decision on the part of the investor.

The investor's decision is of a different kind. When you invest in common stock it is your task to pick



Prepared especially for RESIDENT PHYSICIAN from material provided by Merrill Lynch, Pierce, Fenner & Beane, underwriters and distributors of investment securities, brokers in securities and commodities.

No guarantee

There are no general rules that will guarantee your making successful decisions. There are a few principles, however, that every investor should paste in his hat.

1. **Your investment objective should dictate the securities in which you invest. (See last issue of RESIDENT PHYSICIAN.)**
2. **Write down your objective and refer to it regularly so that you don't unwittingly drift away from it.**
3. **Do not buy a security until you've investigated it thoroughly, judged it in the light of your objective.**
4. **Review your holdings regularly, jotting down on paper your reasons for holding or selling each individual security.**
5. **Keep in mind that facts—not tips, hunches or emotions—are the only sound basis for action.**

the industry, then the company, and the security that best fits your need.

And it becomes your continuing job to keep an eye on the industry and the company so that you can withdraw if economic conditions or inept management threaten the company's future.

As we mentioned previously, your main objective is either *safety*, *income* or *growth*. This objective determines the proportion of each type of security you want to include in your portfolio: bond, preferred stock or common stock.

Many industries

Assuming, for the purpose of illustration, that you want to add a growth common stock to your portfolio, your first question might be: "How do I pick an industry in which to invest?"

To give you some idea of the range of industries, we have listed a more or less typical breakdown.

Agricultural Machinery
Aircraft Manufacturers
Air Transportation
Amusements
Automobiles
Auto Accessories
Banks
Beverages
Building Supplies
Chemicals
Containers
Drugs
Electrical Equipment
Foods
Household Equipment
Insurance and Finance
Machinery
Merchandising
Metals
Paper
Petroleum
Public Utilities
Railroads
Railroad Equipment
Rubber Products
Steel
Sugar
Tobacco

You will recognize that some of these industries are old timers. Some are young. Some you probably know a lot about, others are relatively foreign to you. There are two ways in which you can learn more about any of them.

You can ask someone who has experience in investment matters, or you can proceed to read up on the industry yourself.

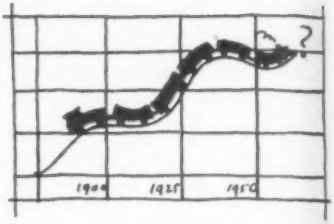
Before taking either of these steps, however, you will want to know some of the questions to ask and a few rules for judging the answers. Otherwise you might do a vast amount of work and still end up with a pig in a poke.

General appraisal

Intelligent appraisal of an industry requires some knowledge of its history. And the picture on any given day is of little importance compared to the pattern set over the months and years.

As you read about or discuss an industry, look for evidence of a trend of growth or decline. Is it inching forward, or slipping back; booming or depressed? Has its volume held up well in slack times, or does it lead the depression parade? Try to gain a picture in terms of its growing or declining importance to the economy as a whole.

Competition, present and potential is a vital factor in determining future patterns. Few industries die of their own accord. They're usually pushed. Some new industry



comes along to supply the economic need better . . . or in some way eliminates the need for the old industry.

The automobile did not compete with the buggy whip, but it made it unnecessary. On the other hand, the automobile business "made" the gasoline business; the petroleum industry was relatively small until the automobile created a new demand.

Questions to ask

This brings us to a number of specific questions you will want to ask, not only about the industry, but also about any individual company:

Who are its customers?
What basic factors determine their demand?
Who are the competitors?
What threat do they offer?
How is the industry's raw material supply?
What is the labor situation?
How is the industry likely to be affected by impending events?

These are not all the questions you should consider. They are some of the more important ones and indicate your lines of inquiry. When you have adequate answers to these

To have and to hold . . . in sickness and in *health.* ➢ How richer the union when the wife is blessed with radiant health . . . how much more capable she is of serving her family, her community! ➢ More and more the physician is the guide and mentor, the preserver of family well-being . . . particularly in his advice to husbands and wives on scientific methods of child-spacing. Because of doctor's knowledge, skill, and experience, healthful parenthood goals are being achieved . . . earning for the doctor respect for his judgment and gratitude for his contribution to richer family life, through his recommendation of *Koromex*

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questions you should be able to say to yourself: "This industry is in a fundamentally sound economic position and has prospects for growth" —or the contrary.

Which company?

When you are satisfied that the industry is a good one, the really critical job begins in selecting a company for your investment. You will want to view each possible candidate under four main headings:

Economic position and prospects
Financial condition
Management
Price of the common stock

More questions

Under a general heading of *economic position*, you will want the same type of information about the particular company that you looked for in the industry. Of course, in

practice you will accumulate some information about the company at the same time. You should give particular emphasis, however, to the standing of the company within its industry, the competition it faces from similar companies, and its past compared to its current position.

Financial condition, like management and the price of the stock, is something that is peculiar to each single company. Once you are satisfied that an industry is good and that a particular company's standing within the industry is generally favorable, your investigation becomes a job of close inspection—you'll want to take your prospective company apart and see what it's made of dollarwise.

Financial analysis is really too big a subject to try crowd into this article. In many respects it is the most important single phase of investment study. Before we leave the subject, however, there are a couple of cardinal points that you would do well to bear in mind.

First, the earnings of the company over a period of years are vastly more important than the figures for any single year.

Second, total figures are of little importance. The relationship between figures is the important thing. (Not total net income, but income per share; not total current assets, but current assets in relation to current liabilities.)

Reputation, skill

Management—the quality of management is not an easy thing to evaluate. For the most part you will have to rely on some measure of management provided by such things

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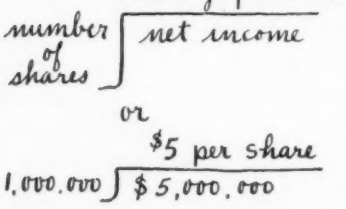
as changes in the company's financial condition, its earnings record, sales, employe relations and so forth. However, as we've already mentioned, when you invest in corporate securities you must rely on the managerial skill of others to run the business. You will want to know something of their reputation certainly; and imagination too.

Price

Price is usually a crucial factor in selecting a common stock for investment. The stock in any going concern might be a buy if it were low enough in price. And too, there is a point beyond which it would be silly to reach for the shares of even an exceptional company.

Except for some government bonds, securities do not have a set



price. (Par value has little meaning except when a security is first sold by the company.) Prices vary with company earnings, business psychology, industry outlook, dividend payments, world events, and other factors.

The more speculative a security is generally the more its price will vary. Furthermore, common stock prices often vary independently of earnings. Let's use an example to see just what this means.

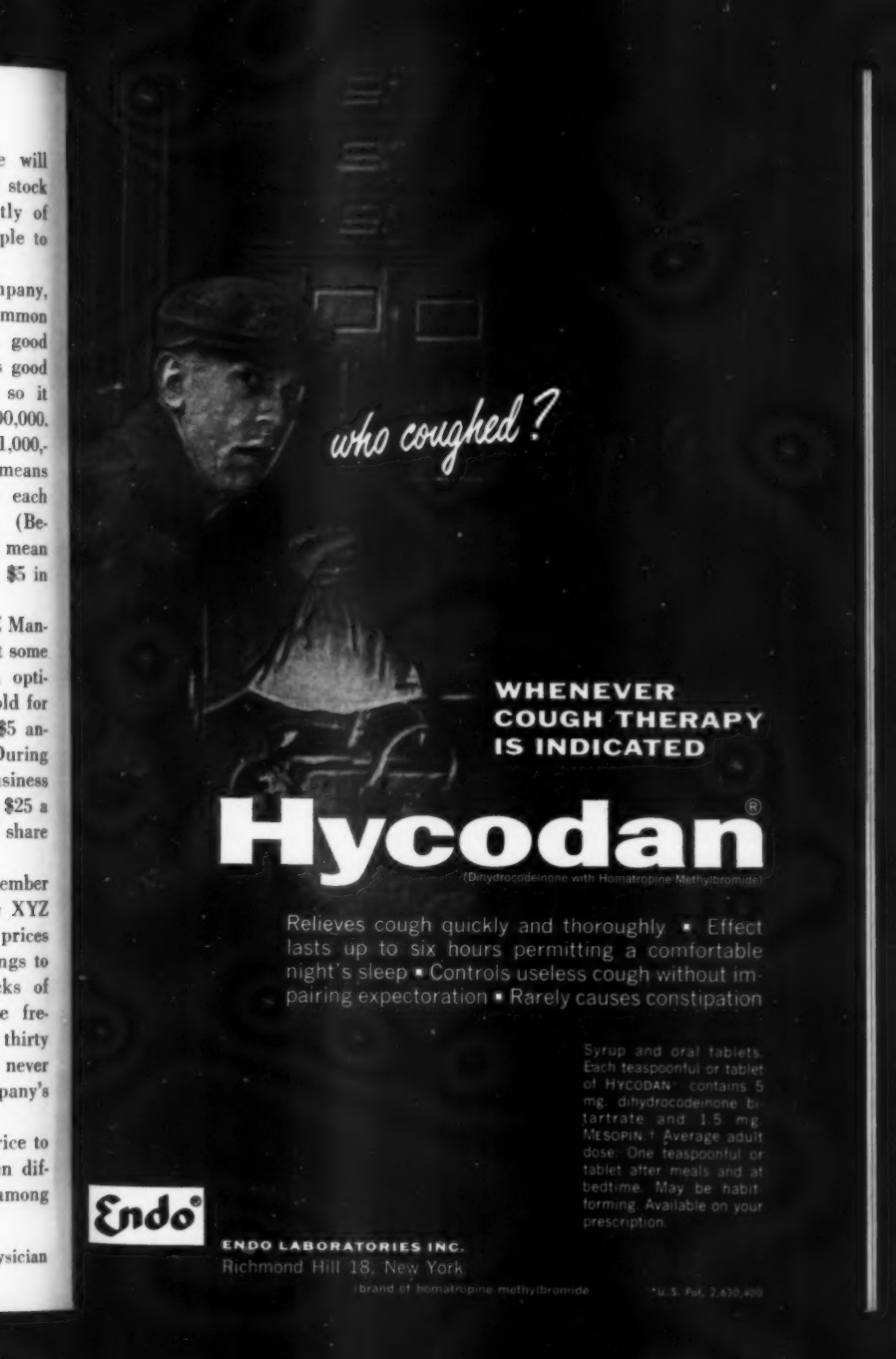
XYZ Manufacturing Company, Inc., has 1,000,000 shares of common stock outstanding. It has a good management and business was good enough last year, let's say, so it chalks up a net profit of $5,000,000.

As XYZ Manufacturing has 1,000,000 shares outstanding, this means the company earned $5 for each share of stock outstanding. (Because $5 was earned does not mean that the directors will declare $5 in dividends.)

Now, what is a share of XYZ Manufacturing worth? We can get some widely different answers. In optimistic periods it might have sold for $100 a share or 20 times its $5 annual earnings per share. During some of the very pessimistic business periods it might have sold for $25 a share, or even less. ($25 a share would be 5 times earnings.)

The important thing to remember is that *over a period of time* XYZ Manufacturing has sold at prices ranging from five times earnings to twenty times earnings. Stocks of many solvent companies have frequently sold from three to thirty times earnings. Stock prices never go to zero even when the company's profits turn to net losses.

Incidentally, this ratio of price to earnings varies widely between different industries and even among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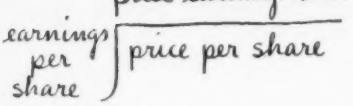

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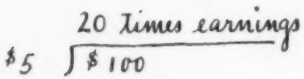


companies within the same industry.

We assumed in our illustration that XYZ Manufacturing was well managed and reasonably prosperous. Given these facts, we still cannot say that XYZ is the stock to buy. That depends a lot on its price at the time a decision must be made. At $25 a share, or 5 times earnings, it might be a bargain. At $100 a share, or 20 times earnings, XYZ Manufacturing might well be considered too high priced. At $50 a share, 10 times earnings, we might take another look at the company's prospects. If the company showed a past history of steady growth, it could be a "buy" at 10 times earnings. If it showed little or no growth, we might consider selling.

When to buy

In making up your mind on the vital question of price, you will want to consider the following points: 1) What are the prospects for the company in terms of competition, economic usefulness and growth? 2) How does the current price-earnings ratio compare with that of similar companies?

Remember, business prospects are often anticipated by stock prices . . . the "ground floor" you get in on could easily be the roof as far as price is concerned.

All investment experience proves that "when to buy" ranks equally in importance with "what to buy". Similarly, the informed investor will recognize that there is no security which can be "bought and forgotten." Successful investment requires periodic review and appraisal to supplement the original judgment on which a purchase was based.

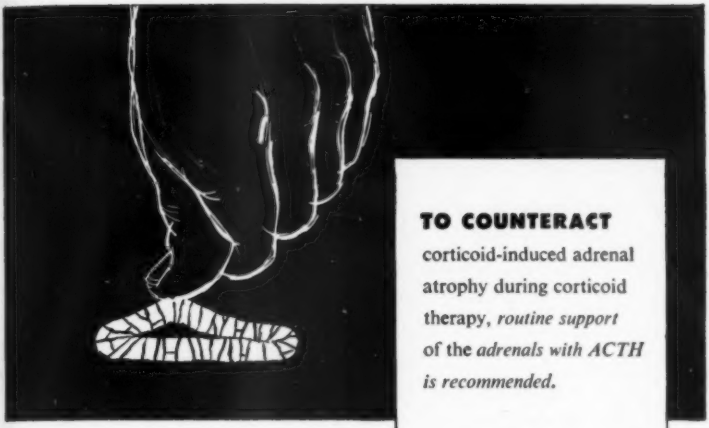
These principles are so important that they literally cannot be over emphasized.

As a final word: *The intelligent investor realizes that prices of securities constantly change. The market value of his stocks will not remain static.*

You must be aware of the advantages of maintaining some sort of balance in your investment funds between high grade fixed income obligations and common stocks. You should be alert to changes dictated by new developments which affect the prices and prospects of your securities.

Next month:

Stock prices, bull and bear markets, and diversification.



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The Resident Writes A Paper

David H. Spodick, M.D.

As a group, house officers probably contribute the least to medical literature. That is, in terms of actual authorship. This certainly is not surprising and, for sufficient reason, is unlikely to change. The hard-pressed resident often has little time to undertake additional projects and is still very much in the maturing process.

Of course, in many teaching hospitals, part and often much of the program involves clinical or basic investigations with the opportunity of at least collaboration in productive work. However, the comments which follow are not directed toward this group. Rather, they are intended for the clinical house officer.

Why "write papers"? Certainly, not solely to see one's name in print. A medical article should be a by-product, never a primary aim, of scientific curiosity.

Far too much in the current literature is the result of scriptorrhea — an affliction of the ambitious in haste to amass a bibliography.

As an example, I once requested a single reprint of a physician. I was promptly obliged with a small carton of repetitious articles. To top that off, I had to pay out fifty-six cents postage!

Objectives

There are at least two solid objectives in producing a scientific paper: (1) To organize your own thoughts, increase your own knowledge in a selected area; and (2) To share original research, new facts and perhaps independent conclusions as a contribution to general enlightenment.

For the resident or intern the first objective will probably be paramount. Writing up a subject for possible dissemination imposes a certain discipline in thought which helps to focus and strengthen both attitude and method along lines of

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scientific objectivity, and inspire close attention to your selected area of interest. By this means, the long-neglected implication and the little-known enriching detail may be brought to light with something like the joy of "discovery."

Honest appraisal

Whether or not a given study is submitted for publication is a matter of secondary consideration. Offering a paper to a journal should depend upon the author's honest appraisal of it as a real contribution (however small) to knowledge. The basic questions in this regard are: Is something new contributed? If not, is this an original approach to the problem? If the article is a review, does it incorporate significant additional work beyond that of other reviews? The answers depend partly on the writer's opinion of his result. But above all they hinge on its evaluation against all the available prior literature on the subject.

Three types

Generally speaking, the clinical house officer is limited to three types of articles: case reports, reviews of the literature or "medical progress" articles, and clinical evaluations of diagnostic procedures or therapeutic modalities.

The case report is often provoked by a single remarkable case or by a series in which a number of factors were shared in common.

Often a search of hospital records will add cases to those personally seen. A single noteworthy case—or a cogent series—backed up with extensive digestion of the pertinent writings will not only enhance the house officer's training but may produce an article for publication.

On the other hand, where interest in a problem is "academic" (i.e.—no clinical material personally managed) a well-ordered review of the literature—especially if the subject is currently "hot"—may warrant a try. In this case the resident with a flair for writing could conceivably surpass grayer heads by a succinct presentation. The major requirement is thorough assimilation of all the available literature. (Here a working knowledge of foreign languages is a great, but not indispensable asset.)

Original

The foregoing, of course, are "non-original" approaches to medical writing. As a clinically occupied resident you have one avenue of more or less "original" work open to you. A particular interest in a given test, procedure or drug may prompt a "series"—observations on a group of patients (usually with controls). For this, consent of the responsible chief of service is usually a prerequisite. Such consent should not be difficult to obtain if a well-thought-out protocol is presented and backed up by a thorough knowledge (and bibliography) of the subject.

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in neonatal atelectasis—

*". . . results are impressive. This dreaded condition usually improved in a few hours, and it was really striking to see a cyanotic baby with gasping respirations and suprasternal retraction become relaxed and pink in such a short period of time."**

CASE REPORT

A typical Alevaire case history—D., a premature male infant (28 to 30 weeks) was delivered as a frank breech. Weight was 3 lb., 6 oz. After birth the patient's condition was poor; shallow, irregular respiration, suprasternal retraction, gasping and cyanosis were present. Breath sounds were diminished, and bilateral atelectatic rales were observed.

The infant was placed in an optimal oxygen concentration in an incubator. Although color and respiration somewhat improved, he remained lethargic. His condition became worse the following day, and respirations were rapid and shallow.

Alevaire aerosol was started and antibiotics were given. Within three hours respiration was deeper and easier, the color improved, and the infant was crying vigorously. Nine hours later, after continued improvement, the lungs were better aerated, the color was pink and respiration was regular.

The next day, the lungs were almost clear on auscultation and no respiratory distress was noted. Therapy was discontinued on the third day; the patient was discharged six weeks later weighing 5 lb., 7 oz.

Alevaire is supplied in bottles of 60 cc. for intermittent therapy and in bottles of 500 cc. for continuous inhalation therapy.

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has been dramatically effective in:

- neonatal asphyxia (due to inhalation of amniotic fluid, mucus obstruction, atelectasis)
- croup • laryngitis • tracheobronchitis
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- poliomyelitis (respiratory complications)
- routine oxygen therapy • tracheotomy
- prevention of postoperative pulmonary complications

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*Seessaert, Andre; Collins, V. J.; and Kracum, V. D.: *New York Jour. Med.*, 55:1587, June 1, 1955.

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Often suggestions and encouragement, if not outright collaboration, will be offered. Results obtained by such studies will always be of interest to the hospital staff and may be of sufficient value to warrant publication.

Naturally, once a paper is prepared, approval must be obtained from the appropriate hospital authority, usually the publications committee.

Material

What about "clinical material"? No one has yet found a hospital without periodic interesting cases; no house officer's tenure is without them. Hospital records do not lack for unusual conditions and many hospitals contain such numbers of mere common afflictions that significant conclusions may be drawn from them. With the almost universal use of coding systems, this matter may often be settled quickly by a phone call to the record room. The Quarterly Cumulative Index Medicus is the basic background material requirement and actually is the sole requirement for review articles.

Once data and reference material are assembled, tables set up and graphs drawn (if applicable), one is ready to become an author. This is an ideal time to pause and decide whether you have a viable embryo. You may have learned much in the investigation of your problem, but "publication - worthiness" is determined by what you are contributing to what has already been done. A good knowledge of the preceding literature plus academic honesty will make the decision.

Good form

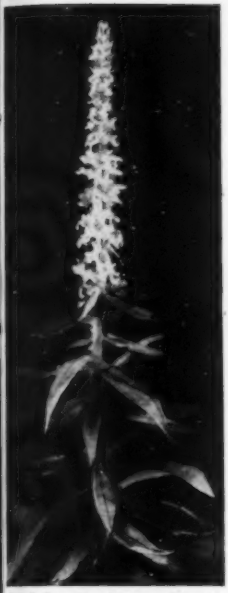
The writing of a good paper obviously demands attention to organization and lucidity. These may be highly personal matters but also require some attention to acceptable form. Perusal of even the leading journals discloses some of the very best work presented not only in marginal English, but also — and probably worse — with a total lack of imagination.

In this respect our English colleagues seem to have a decided advantage. In my opinion, they appear to present essential data without the masses of verbiage and superfluous references which are currently the style with many of us. Fortunately, in recent years this deficiency has been recognized and there are several excellent monographs for the budding medical author. These will not substitute for talent but will help to obviate most technical and even many "literary" pitfalls. To cite several:

Trelease, F., "The Scientific Paper." Baltimore, The Williams and Wilkins Company, 1947. 152 pages.

Fishbein, M., "Medical Writing." Philadelphia, Blakiston Company, 1948. 292 pages.

Jordan, E. P. and Shepard, W. C., "Rx for Medical Writing." Phila-



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From digitalis to digoxin . . .

The use of active principles instead of whole vegetable drugs spares the patient side effects from the actions of nonspecific constituents and spares him variable results due to the variations of nature. This basic concept is well exemplified by digitalis and its glycosides . . . but which of these glycosides is to be preferred?

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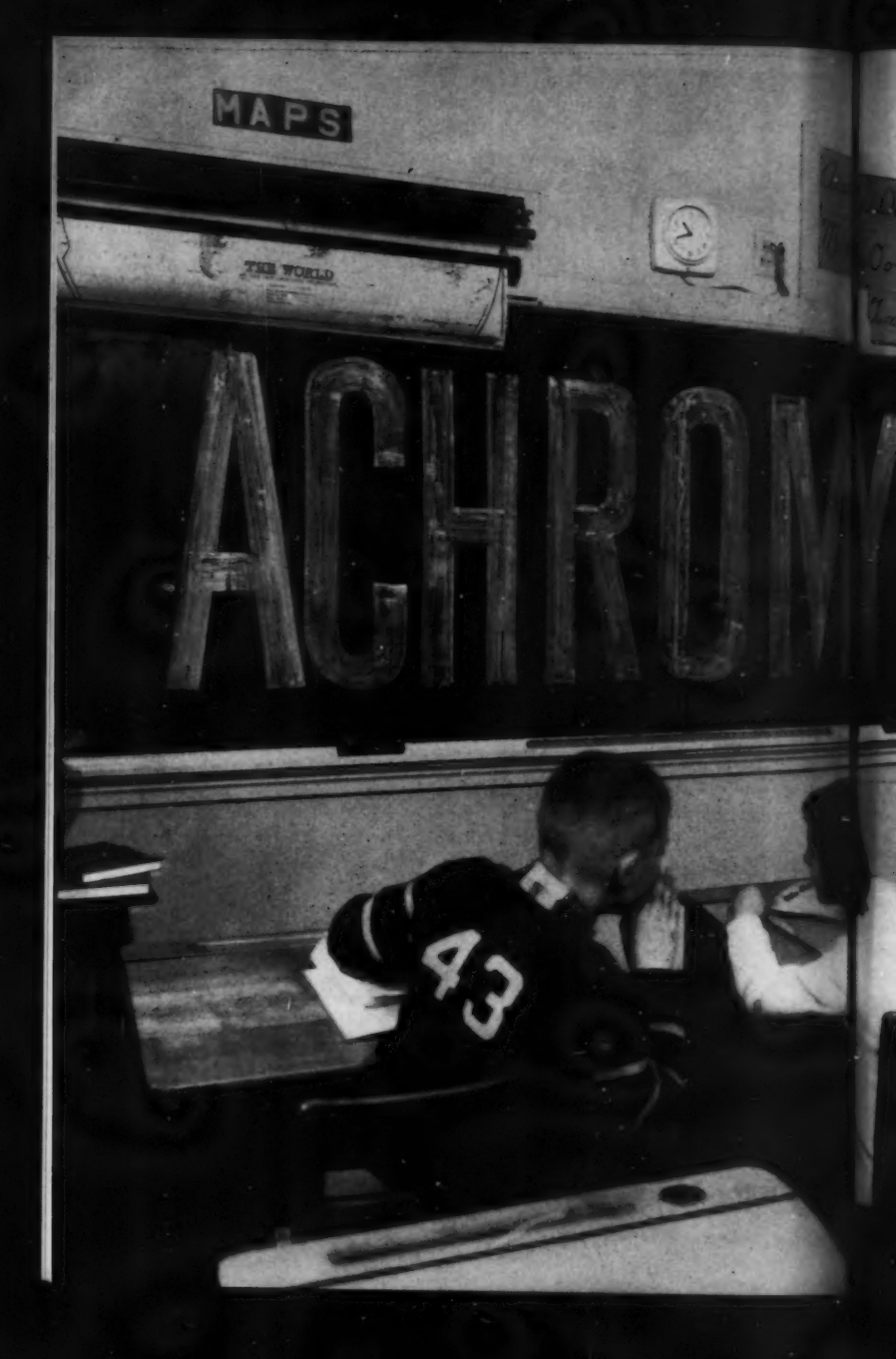
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43

ACHROMYCIN*

Tetracycline *Lederle*

in the treatment of

respiratory infections

January and his associates[1] have written on the use of tetracycline (ACHROMYCIN) to treat 118 patients having various infections, most of them respiratory, including acute pharyngitis and tonsillitis, otitis media, sinusitis, acute and chronic bronchitis, asthmatic bronchitis, bronchiectasis, bronchial pneumonia, and lobar pneumonia. Response was judged good or satisfactory in more than 84% of the total cases.

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No matter what your field or specialty, ACHROMYCIN can be of service to you. For your convenience and the patient's comfort, Lederle offers a *full* line of dosage forms, including

ACHROMYCIN SF

ACHROMYCIN with STRESS FORMULA VITAMINS. Attacks the infection—defends the patient—hastens normal recovery. For severe or prolonged illness. Stress formula as suggested by the National Research Council. Offered in Capsules of 250 mg. and in an Oral Suspension, 125 mg. per 5 cc. teaspoonful.

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[1]January, H. L. et al: Clinical experience with tetracycline. *Antibiotics Annual* 1954-55, p. 625.

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delphia, W. B. Saunders Company, 1952. 112 pages.

Postell, W. D., "Applied Medical Bibliography." Springfield, Illinois, Charles C. Thomas Company, 1955. 142 pages.

Journals

Once the final work, polished through three or four drafts, receives the hospital stamp of approval, one is faced with the selection of the appropriate publication for submission. Several important factors operate here. As a matter of prestige most of us would prefer a leading journal — often a specialized one. The type of paper must be considered, too. Many journals accept articles of clinical, investigative, or review nature. The specialty publications are restricted to their own fields and often, but not invariably, require advanced work or especially novel approaches to well-worked-over themes.

One would not submit an isolated case report of atrial fibrillation to the *American Heart Journal* unless some new or unusual consideration were involved.

Journals are not closed to resident authors either. Residents have published solo articles in the most "highbrow" periodicals. State medical journals are often in need of good material on any subject.

Publication inertia

Editorial boards are composed of outstanding men who read and accept or reject articles for publication. Acceptance for publication confers a certain amount of authority on a scientific paper. It has been thought "good enough" by "those who know" and stamps the author as having special knowledge in the field. As a practical matter, this will have direct value in certain situations. Most applications for fellowships, hospital, industrial, insurance and university positions as well as the armed forces personnel index (201 file) have sections for "Titles of Papers."

A final word about the main stumbling block, the real and effective enemy of productive work: *Inertia.* In most instances, inertia is compounded of lack of stimulation, feelings of inferiority and other factors. However, inertia can be overcome simply by making an honest attempt at doing a scientific study. It may not be easy; but it is always fun and most often of great educational value, *published or not.*

The resident is in the best possible climate for one or more "research and write-up" efforts. It has often been said that a thorough acquaintance with a given sector of knowledge is preferable to—and far more stimulating than—a relatively superficial grasp of an entire field. The resident, with a little effort, can usually make a fine contribution, sometimes reach publication, and always advance his own knowledge to an important and satisfying degree. •

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A: This new G-E PATRICIAN
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YOURS . . . General Electric quality . . . complete diagnostic x-ray unit with tilt table . . . combined facilities for fluoroscopy and radiography—all for just $4950, f.o.b. Milwaukee, U.S.A.

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Anesthesiology Board Requirements

The American Board of Anesthesiology was formed in June, 1937, as an affiliate of the American Board of Surgery. It was organized by a committee representing the American Society of Anesthetists, the American Society of Regional Anesthesia and the Section on Surgery of the American Medical Association. In 1941 the American Board of Anesthesiology was established as a separate major Board.

Purposes

In brief the Board was set up to:

1. Elevate the standards of the practice of anesthesiology.

2. Establish criteria of fitness to be designated a specialist in the practice of anesthesiology.

3. Encourage improvement of educational facilities and clinical training in anesthesiology at undergraduate and graduate levels in the medical schools and hospitals.

4. Advise the Council on Medical Education and Hospitals of the American Medical Association concerning approval of residency training programs.

5. Arrange, control, and conduct examinations to determine the competence of physicians who voluntarily apply and to issue certificates to those who meet the required standards.

6. Serve the public, medical profession, hospitals, and medical schools by preparing lists for publication of physicians certified by the Board.

Basic requirements

Each applicant must show evidence that:

1. He is a physician duly licensed by law to practice medicine.

2. He is of high ethical and professional standing.

3. He has graduated from an approved medical school in the United States or Canada, or has successfully completed the examinations of the National Board of Medical Examiners. Applicants must have completed an internship of not less than one year in a hospital approved

by the Council on Medical Education and Hospitals of the American Medical Association, or its equivalent.

Graduates of Class B medical schools are not eligible to take the Board examinations.

Graduates of foreign medical schools, not recognized by the Council on Medical Education and Hospitals of the American Medical Association before admission to the examinations must:

- Pass the examinations of the National Board of Medical Examiners, and
- Be fully licensed to practice medicine in the state in which they are practicing.

Graduates of medical schools outside of the United States which are recognized by the Council on Medical Education and Hospitals of the American Medical Association before admission to the examinations must be fully licensed to practice medicine in the state in which they are practicing.

Special requirements

1. The applicant must submit proof to the Board that he has limited his practice to anesthesiology as a specialty for five calendar years of which at least two have been in formal clinical training approved by the Board, and that he intends to continue to limit his practice to anesthesiology.

2. Prove to the satisfaction of the Board by such written survey, oral, and practical examinations as the Board may prescribe that he is qualified to practice anesthesiology.

3. Personally prepare such case history abstracts of personally conducted procedures pertaining to anesthesiology as the Board may specify.

Each applicant shall be classified for the purpose of examination, and shall be examined in such a manner and under such rules as the Board may prescribe. The Board, acting as a committee of the whole, reserves the right to reject an applicant for any reason deemed advisable and without stating the same. The action of the Board shall be final.

Application and fees

Application for certification may be made after a physician has com-

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Knowing exactly what's required often prevents confusion and costly misunderstandings. Here are essential facts for quick review. When your particular specialty appears, mark the cover and binding of the issue for ready reference.

The information contained in this article was obtained through direct correspondence with the specialty board. Current news such as changes in requirements, special announcements, and notices of date and place of examination will be published in *Resident Physician* as received from the various boards.

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pleted one year of approved training. Application must be made to the Secretary upon a form prescribed by the Board, procured only on written request of the applicant, and must be filed at least six months prior to the date of examination.

The Secretary cannot make eligibility rulings. These are made only by the entire Board on recommendation of the appropriate committees after reviewing the candidate's formal application.

The fee shall be $125. At least $50 shall be paid upon filing the application, of which sum $35 shall be returned if the candidate is not accepted for examination. The remainder ($75) shall be paid before the examination.

The Board is a non-profit organization. The fees for examination and certification have been computed on a basis of cost of maintaining an administrative office and conducting examinations. The Board reserves the right to increase the fee when necessary.

Applicants whose original applications were declared void through failure to take the written or oral examination within the three year period will be required to file a new application under the current rules and regulations, pay a new application fee and submit to both written and oral examination.

Applicants whose original applications were declared void through failure to pass the written or oral examination within the three year period, having taken one or more written or oral examinations, must submit proof of an additional year of approved training before their re-applications will be considered. The re-application will be considered under the current rules and regulations, and the applicant must pay a new application fee and take both written and oral examination.

Written examination

Eligible applicants may take this examination upon completion of two years of clinical training approved by the Board. Written examinations are held in approximately sixteen locations throughout the United States on the third Friday in July. Written examinations are of the multiple choice type covering the following subjects: anatomy, chemistry and physics, pharmacology, pathology and physiology. A passing grade, as determined by the Board, is required.

Notice of results of the written examination are delayed for approximately two months—until early September—due to delays in scoring and analysis.

Survey examination

Started in 1949, this examination is conducted by one or more diplomates of the Board who visit the applicant in his own locality to observe him in the practice of anesthesiology. The examiner may interview other individuals in the community to determine whether the

in refractory heart failure

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The average effective dose of Gitaligin is only one-third the toxic dose,[1,9] and its moderate rate of dissipation[10] assures maximum ease and safety of maintenance.

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Supplied: Bottles of 30, 100 and 1000 tablets.

1. Hejtmancik, M.R., and Herrmann, G.R.: Texas St. J. M. 51:238 (May) 1955.
2. Ehrlich, J.C.: Arizona Med. 12:239 (June) 1955.
3. Hejtmancik, M.R., and Herrmann, G.R.: Arch. Int. M. 90:224 (Aug.) 1952.
4. Marriott, H.J.L.: Ann. Int. M'ed. 40:820 (Apr.) 1954.
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6. Dimitroff, S.P., Griffith, G.C., Thorner, M.C. and Walker, J.: Ann. Int. Med. 39:1189 (Dec.) 1953.
7. Batterman, R.C.; DeGraff, A.C., and Rose, O.A.: Circulation 5:201 (Feb.) 1952.
8. Batterman, R.C.; DeGraff, A.C., and Rose, O.A.: Am. Heart J. 42:292 (Aug.) 1951.
9. Batterman, R.C.; DeGraff, A.C.; Gutner, L.B., Rose, O.A. and Lhowe, J.: Fed. Proc. 9:256 (Mar.) 1950.
10. Council on Pharmacy & Chemistry: New and Nonofficial Remedies 1954. Philadelphia, J. B. Lippincott Company, 1954, p. 272.

Complete literature available upon request to:

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candidate is of high ethical and professional standing. This examination is conducted upon completion of four years limited to anesthesiology (including two years of approved clinical training), and successful completion of the written examination. The Board may require more than one survey examination.

The expense of surveying and giving practical examinations outside of the United States will be born by the candidate. The approximate amount of such funds will be determined by the Secretary and must be paid in United States currency to the American Board of Anesthesiology in advance.

Oral examination

Upon completion of the survey examination and five years limitation of practice to anesthesiology, the candidate's qualifications are reviewed and he may be declared eligible to appear for the oral examination. However, at least six months must elapse between the written and oral examination. Examinations are conducted semi-annually, in April and October. Examiners consist of directors of the Board plus diplomates who assist as associate examiners. Oral examinations cover all phases of anesthesiology, including the basic sciences and clinical applications.

Notice of results of the oral examination are sent out approximately one week after the date of examination.

Practical examination

At the discretion of the Board practical demonstrations may be required of the management of the candidate's clinical practice in his local surroundings. This may include inspection of clinical records, reports of departmental activities, library facilities, available apparatus and demonstration of application of anesthetic agents, methods and all techniques included in anesthesiology. The candidate will also be appraised as to whether he is of high ethical and moral standing in his community.

Re-examination

Applicants are entitled to three consecutive opportunities at yearly intervals to satisfactorily complete the written examination. This three year period begins on the date an applicant is first declared eligible for the written examination.

Oral examinations are given at six month intervals. An applicant is entitled to one oral examination each year for a three year period. In the event that a candidate fails an oral examination, at least twelve months must elapse before he may reappear for the oral examination. As with the written exam, the three year period begins on the date an applicant is first declared eligible for the oral examination.

Failure to take an examination constitutes an opportunity just as much as failure to pass an examination. However, under extenuating

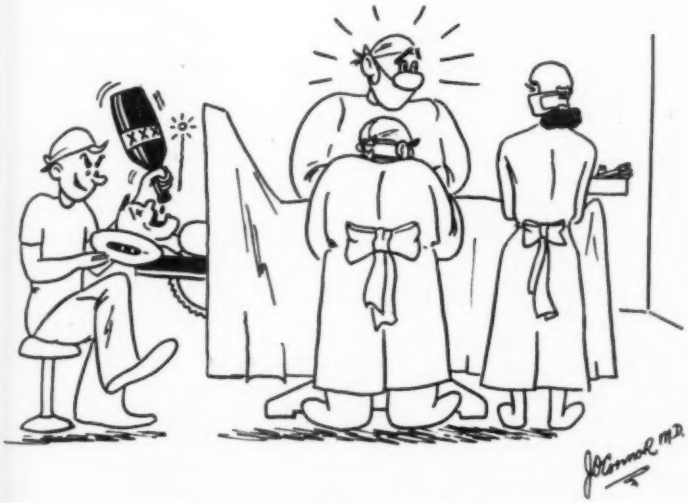
circumstances, such as illness or military service, a candidate may obtain extension of the three year period by writing to the Secretary's office prior to the expiration of the three year period.

A fee of $25 will be charged for each repeat of the written and oral examination. The Board may, however, at its discretion deny a candidate the privilege of re-examination.

The Board reserves the right to limit the number of candidates to be admitted to any examination.

Further information

Application forms and information may be obtained by writing to: Dr. Curtiss B. Hickcox, Secretary, Hartford Hospital, 80 Seymour Street, Hartford 15, Connecticut.



Best durn relaxation we've ever had!

What's the Doctor's Name?

By Victor R. Jablokow, M.D.

Born at Taganrog, Russia, in 1860, a son of simple, half-educated, religious people, he was given a liberal education. In 1879 he graduated from Gymnasium in Taganrog and matriculated as a student of the Medical Faculty of the Moscow University. He obtained his medical degree in 1884. While studying, he began to write short stories for comic papers. In 1886 a series of his stories was collected in a book which had an immediate success. This was soon followed by another volume. Many of his later stories included doctors as the acting personages. Having gained popularity, he was able to write exclusively for the largest daily paper in Moscow and became financially independent. On taking his degree he did not settle down to practice as a doctor but continued his literary career. His short stories, which made his name world famous, marked a new era in Russian literature.

In 1890 he traveled through Siberia and made a thorough investigation of convict life. The results were published in the book "Sakhalin Island" (1891). This book is supposed to have influenced certain reforms in prison life which were introduced in 1892. During the cholera epidemic of 1892-93 he worked as the head of a sanitary district.

In 1895 he wrote "The Seagull" which had a great success as a stage play under the direction of Stanislavsky. He produced several other plays, among them "Uncle Vanya," "The Three Sisters" and, best known in this country, "The Cherry Orchard." In 1901 he married a leading actress of the Art Theater, Olga L. Knipper, who performed many major roles in his plays. The last years of his life were spent in Yalta where he had built himself a villa. He suffered from tuberculosis, was sent to a German health resort in the Black Forest and died there in June, 1904. His body was returned to Moscow for interment.

His literary works had a great influence upon many modern authors, among them Bernard Shaw and Ernest Hemingway.

Can you name the doctor without turning to page 146?

PHOSPHO-SODA
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as evidenced by
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A proven laxative...
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Lynchburg, Virginia
Established 1869

Phospho®-Soda (Fleet) is a solution containing in each 100 cc., sodium biphosphate 48 gm., and sodium phosphate 18 gm.

Mediquiz

Questions are from a civil service examination given to candidates for physician appointments in municipal government.

Answers on page 142.

1. A patient, male, age 45, is admitted to the hospital with a diagnosis of acute pancreatitis confirmed by physical and laboratory examinations. The presently accepted immediate treatment on admission is: (A) immediate drainage of pancreas; (B) supportive intravenous therapy and bed rest; (C) cholecystostomy; (D) cholecystectomy.

2. Of the following conditions, the one which is an indication for immediate thoracotomy in a fresh wound of the chest is: (A) retained bullet in the lung; (B) hemothorax; (C) hemopneumothorax; (D) persistent hemorrhage.

3. Recent work has shown that immediate treatment of acute follicular tonsilitis with penicillin is indicated because it: (A) has reduced incidence of subsequent rheumatic fever in such patients; (B) alleviates pain rapidly; (C) prevents laryngeal obstruction; (D) eliminates the splenomegaly frequently found with tonsilitis.

4. Of the following disorders, the one which usually must be reported in writing to the local department of health within 24 hours after diagnosis is: (A) infectious mononucleosis; (B) roseola infection; (C) carbon tetrachloride poisoning; (D) mycosis fungoides.

5. During the active period of poliomyelitis, the causative virus has been most regularly isolated from the: (A) urine; (B) spinal fluid; (C) blood; (D) stool.

6. Among the rickettsial diseases, an initial lesion (eschar) is most commonly observed in: (A) endemic typhus fever; (B) Rocky Mountain spotted fever; (C) rickettsial pox; (D) Brill's disease.

7. Right bundle branch block is invariably a sign of: (A) heart disease; (B) abnormal conduction through the right branch of the bundle of His; (C) interauricular

because a diuretic
should be able to control
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septal defect; (D) right ventricular hypertrophy.

8. A diastolic apical murmur associated with a diastolic aortic murmur in the presence of only left ventricular enlargement suggests organic deformity of: (A) the aorta; (B) both aortic and mitral valves; (C) only aortic valve; (D) the chordae tendineae.

9. A pericardial friction rub associated with precordial pain and tachycardia is due to pericarditis alone and not to a myocardial infarction if the electrocardiogram shows: (A) elevated ST segments in all three standard leads and no abnormal Q waves; (B) elevated ST segments and a large Q wave in lead I and a depressed ST segment in lead III; (C) the PR interval is prolonged; (D) the QT interval is prolonged.

10. Rheumatoid spondylitis (ankylosing spondylitis, Marie-Strumpell disease) is most commonly encountered among: (A) policewomen; (B) male patients past 50 years of age; (C) physically active males between 20 and 30 years of age; (D) elderly persons of both sexes.

11. For patients with chronic rheumatoid arthritis, removal of "foci of infection" is: (A) of no importance; (B) seldom helpful; (C) the first appropriate treatment

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References: 1. Trussell, R. E.: Trichomonas Vaginalis and Trichomoniasis, Springfield, Ill., Charles C Thomas, 1947. 2. Lanceley, F., and McEntegart, M. G.: Lancet *1*:668 (April 14) 1953. 3. Strain, R. E.: J. Urol. *54*:483 (Nov.) 1945. 4. Karnaky, K. J.: Urol. & Cutan. Rev. *48*:812 (Nov.) 1938.

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to be considered; (D) consistently beneficial.

12. Osteoarthritis is properly treated by: (A) physical therapy and analgesics; (B) vaccines; (C) antibiotics; (D) gold salts.

13. The blood sugar fails to rise normally during an oral glucose tolerance test in: (A) sprue; (B) renal diabetes; (C) ulcerative colitis; (D) hypothyroidism.

14. A young person with a classical gastric ulcer history and a negative physical examination who responds to atropine and phenobarbital with complete remission of symptoms should next have: (A) a psychiatric evaluation; (B) serum amylase; (C) x-ray of upper gastrointestinal tract; (D) gastroscopy.

15. After discontinuance of cortisone used for a prolonged period in the management of rheumatoid arthritis, the antirheumatic benefits: (A) always persist indefinitely; (B) promptly disappear in the majority of cases; (C) very slowly disappear in all cases; (D) will not recur with subsequent use.

"MEDIQUIZ" ANSWERS

1(B), 2(D), 3(A), 4(C), 5(D), 6(C), 7(B), 8(C), 9(A), 10(C), 11(B), 12(A), 13(A), 14(C), 15(B).

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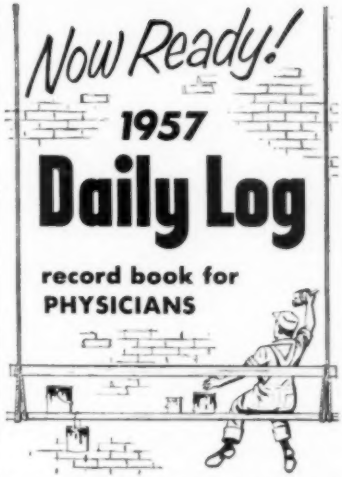

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WHAT'S THE DOCTOR'S NAME?

(from page 136)

An on Chekhov

VIEWBOX DIAGNOSIS

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(Puzzle on page 17)

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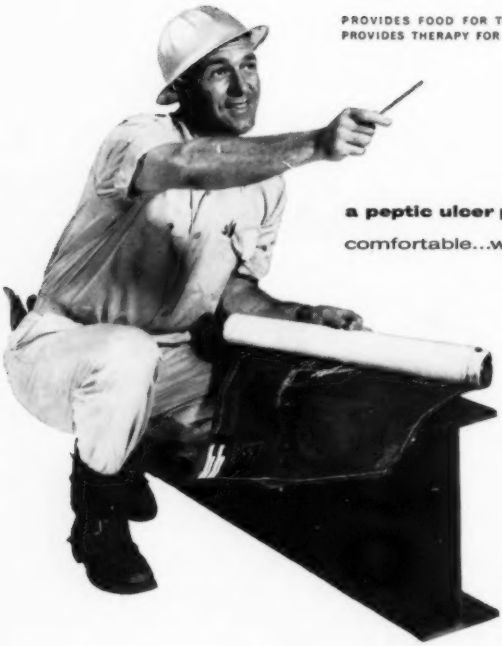

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